

KIC 010340115

Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R_{\star} (R_{\odot})	T_{\star} (K)	R_p (R_{\oplus})	S_p (S_{\oplus})
010340115-01	OBS	No	0.933697	131.557111	46.9	3.414	8.6	8.3	0.87	5692	0.62	2067.08
010340115-02	OBS	No	180.532438	139.685737	709.4	7.890	8.3	7.9	0.87	5692	2.56	1.85

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010340115-01	OBS	FP	0.00	1	0	1	1	LPP_DV—HALO_GHOST—EPHEM_MATCH
010340115-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

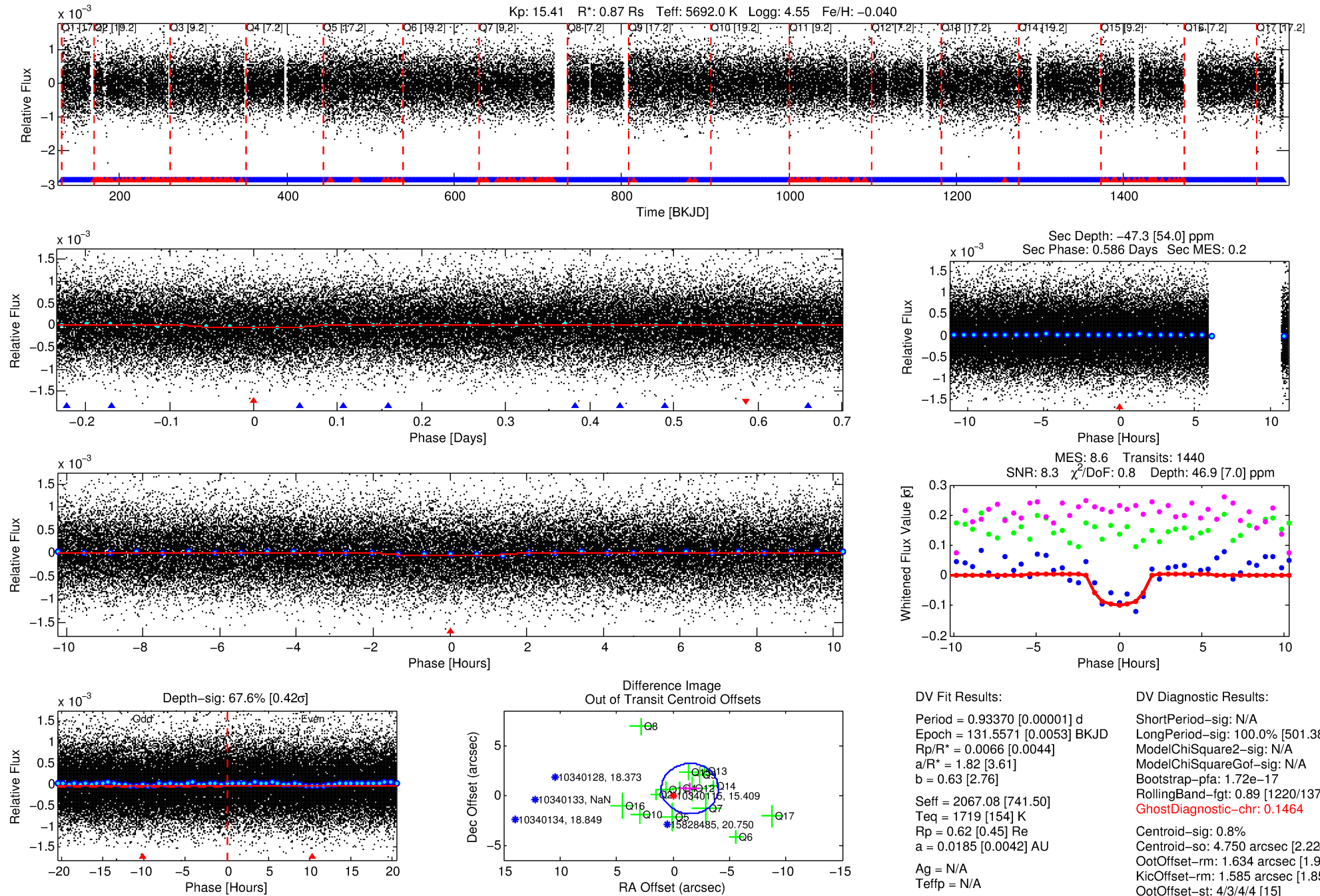
Ephemeris Match Information For 010340115-01

TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist (")	ΔRow	ΔCol	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
010340115-01	10340115	V2083-Cyg-pri	10342012	1:2	1810.3	207	-406	6.90	15.41	4219.60	Direct-PRF	0	4.92	3.83

Notes: $P_1:P_2$ is the period ratio. Dist is the distance in arcseconds. ΔRow and ΔCol are the number of pixels apart in row and column. m_2 and m_1 are the magnitudes of the parent and child. D_2/D_1 is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant $\sigma_P < 5.0$ and $\sigma_T < 5.0$. Matches which have σ_P and σ_T very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

DV One-Page Summary

KIC: 10340115 Candidate: 1 of 2 Period: 0.934 d



DV Fit Results:

Period = 0.93370 [0.00001] d
Epoch = 131.5571 [0.0053] BKJD
Rp/R* = 0.0066 [0.0044]
a/R* = 1.82 [3.61]
b = 0.63 [2.76]
Seff = 2067.08 [741.50]
Teff = 1719 [154] K
Rp = 0.62 [0.45] Re
a = 0.0185 [0.0042] AU
Ag = N/A
Teffp = N/A

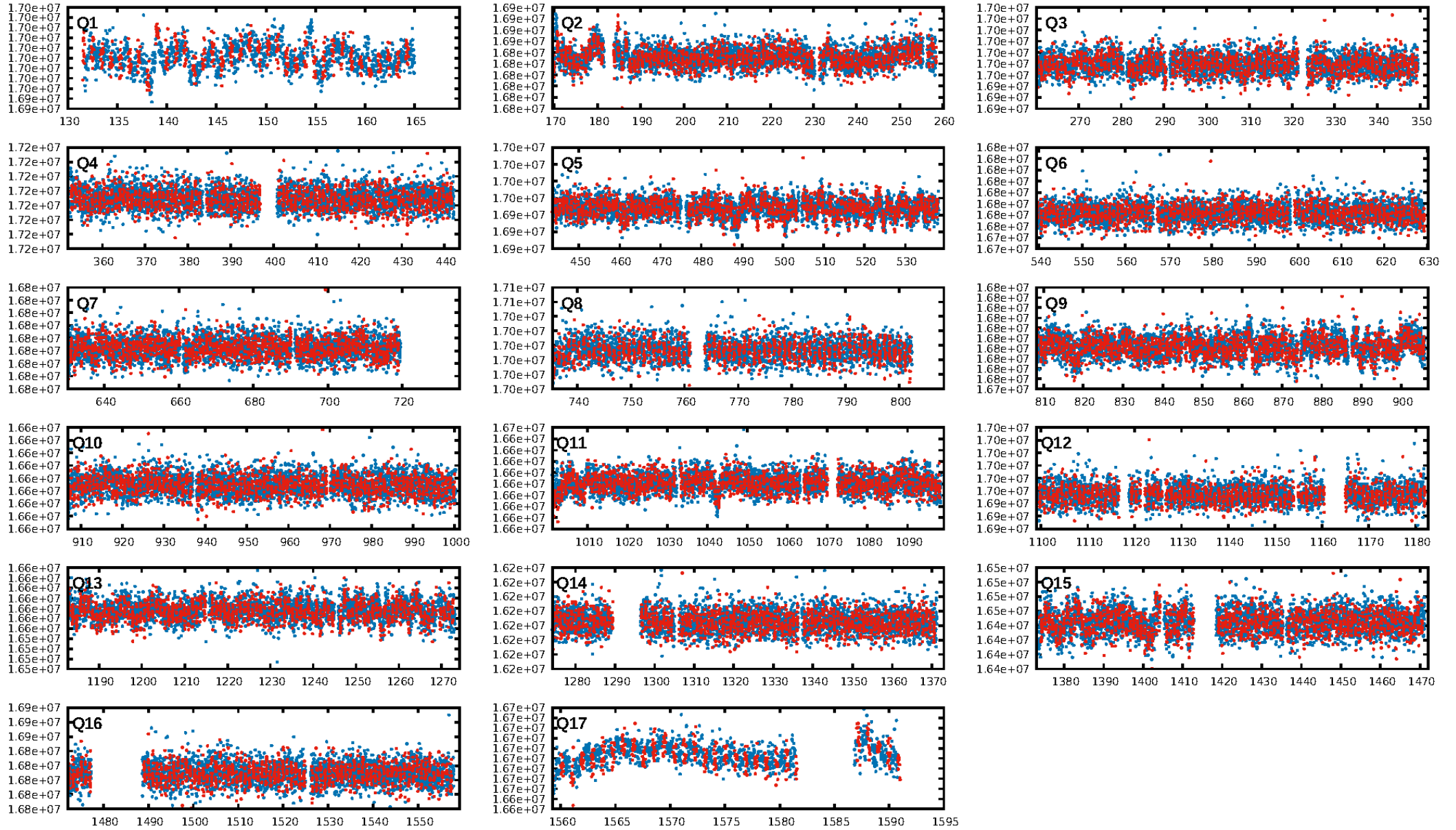
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [501.38 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.72e-17
RollingBand-fgt: 0.89 [1220/1374]
GhostDiagnostic-chr: 0.1464
Centroid-sig: 0.8%
Centroid-so: 4.750 arcsec [2.22 σ]
OotOffset-rm: 1.634 arcsec [1.95 σ]
KicOffset-rm: 1.585 arcsec [1.85 σ]
OotOffset-st: 4/3/4/4 [15]
KicOffset-st: 4/3/4/4 [15]
DiffImageQuality-fgm: 0.00 [0/15]
DiffImageOverlap-fno: 1.00 [17/17]

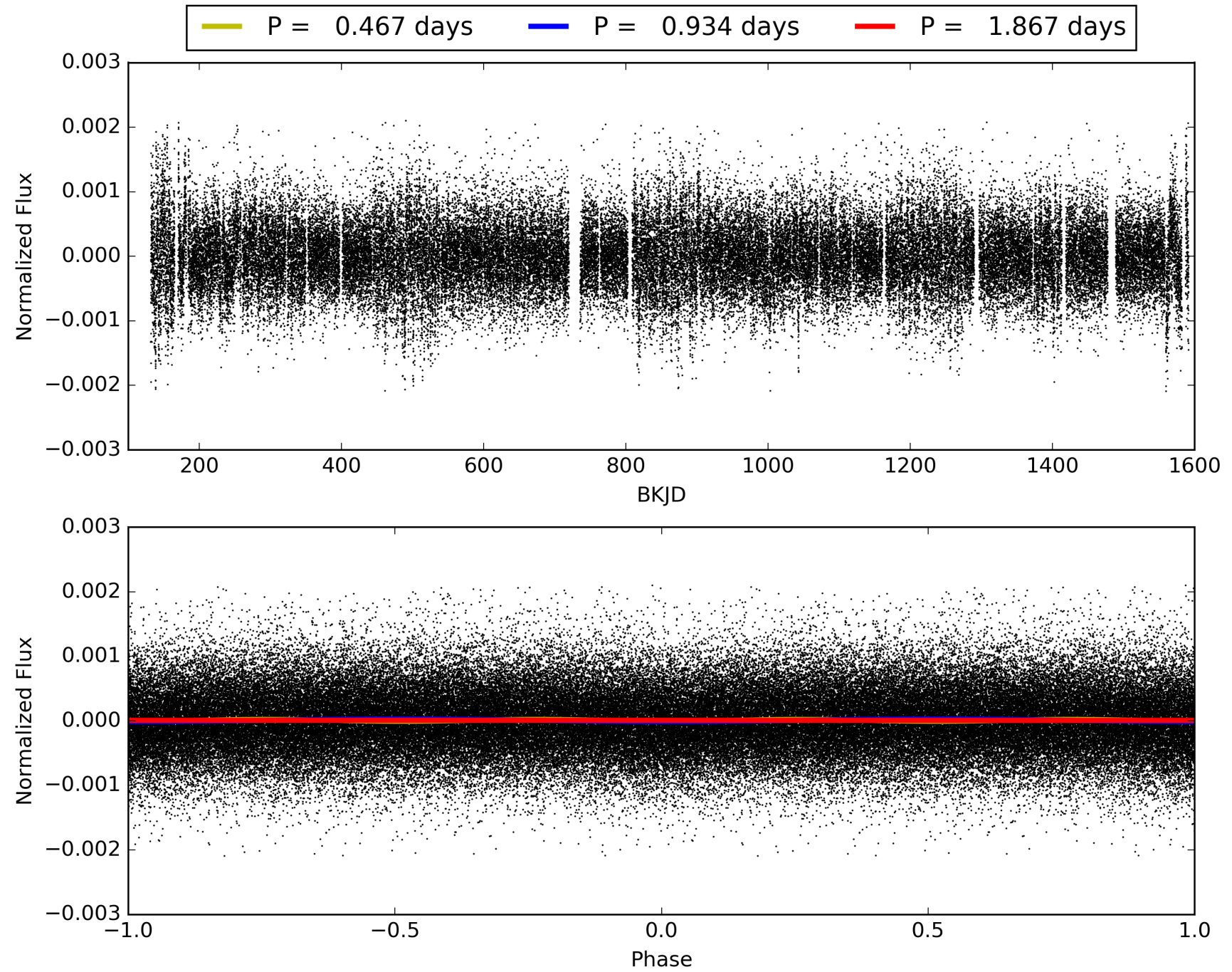
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 04:19:52 Z

This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 010340115-01, PDC Light Curves

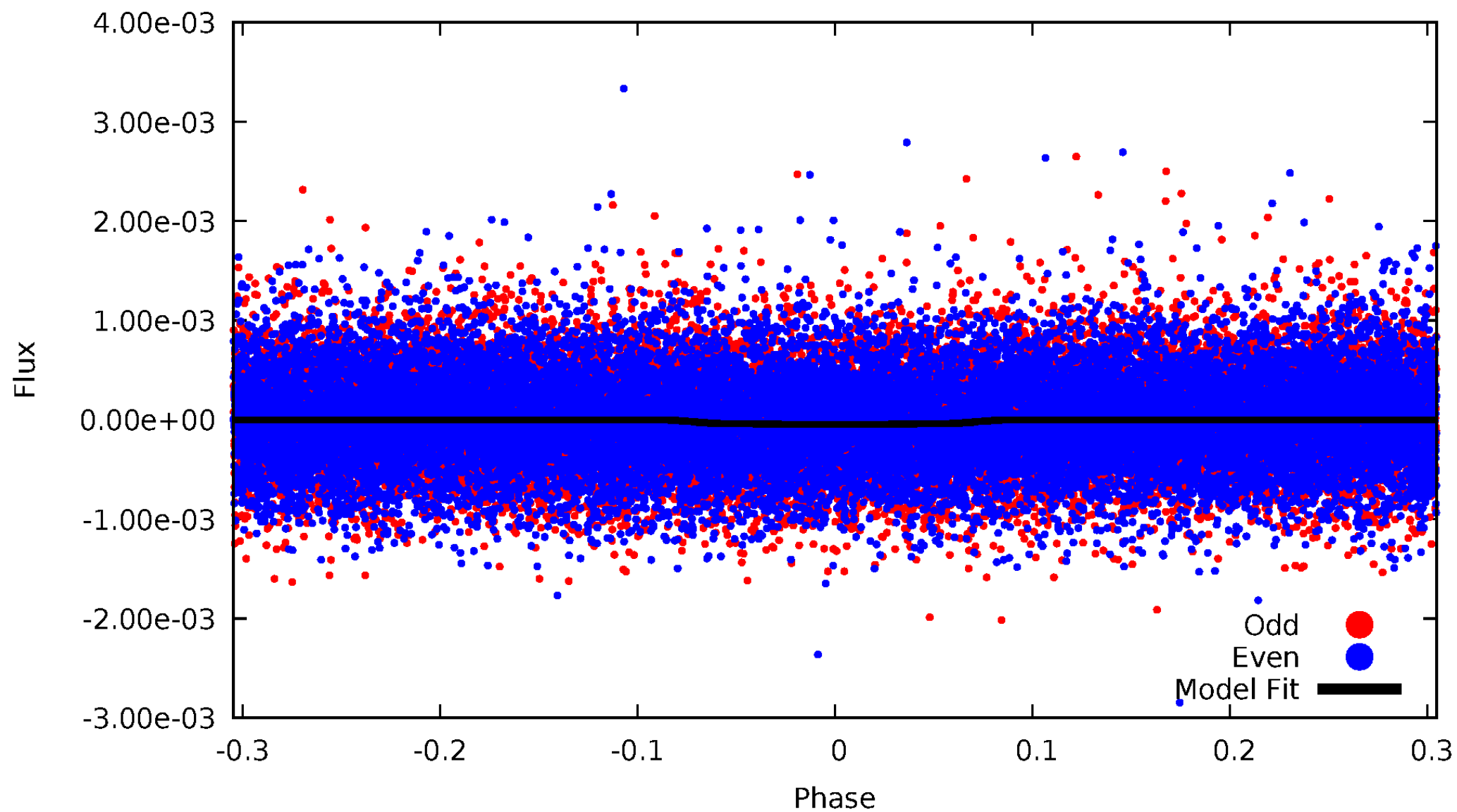


TCE 010340115-01



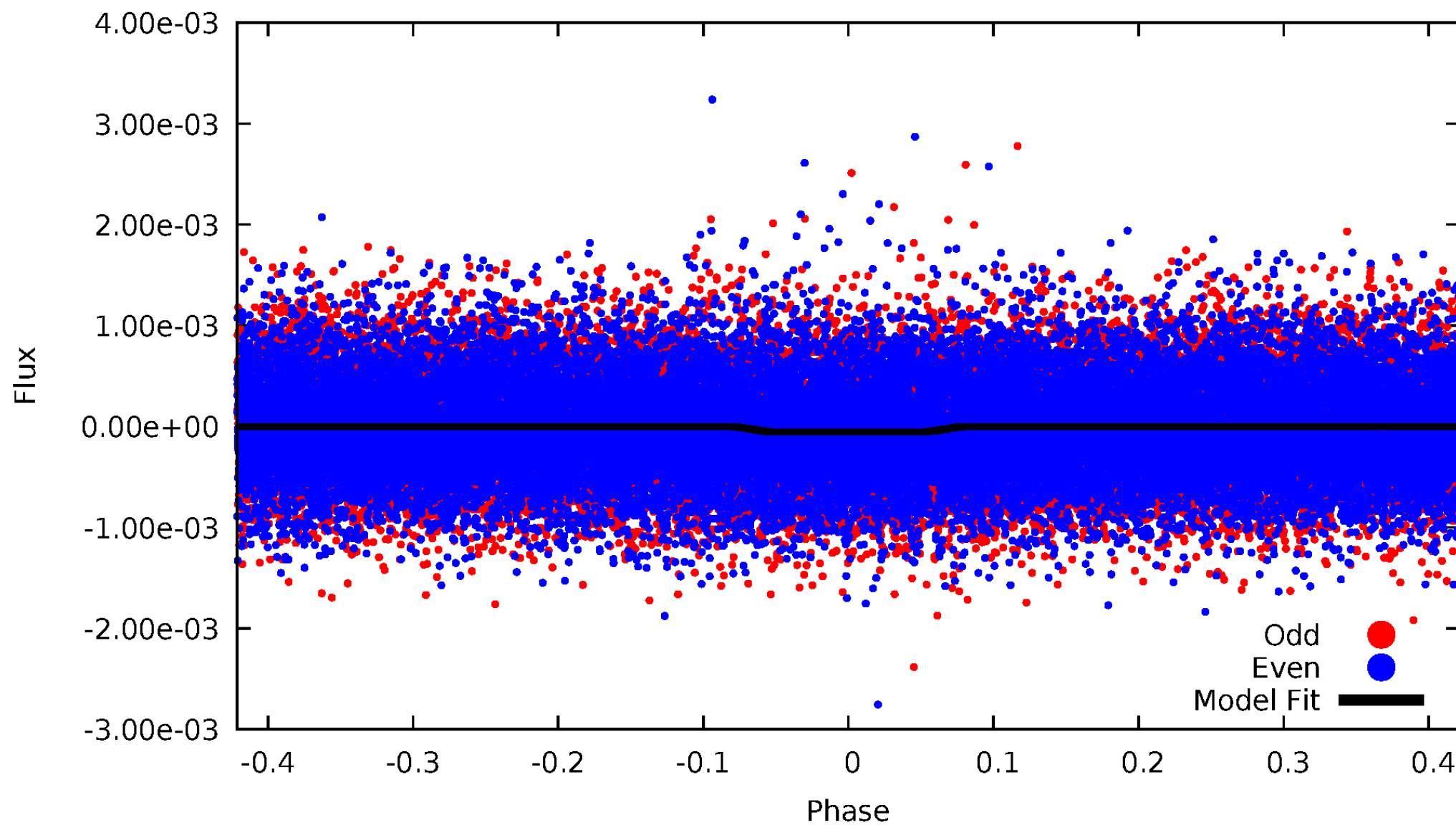
DV Odd/Even

TCE 010340115-01



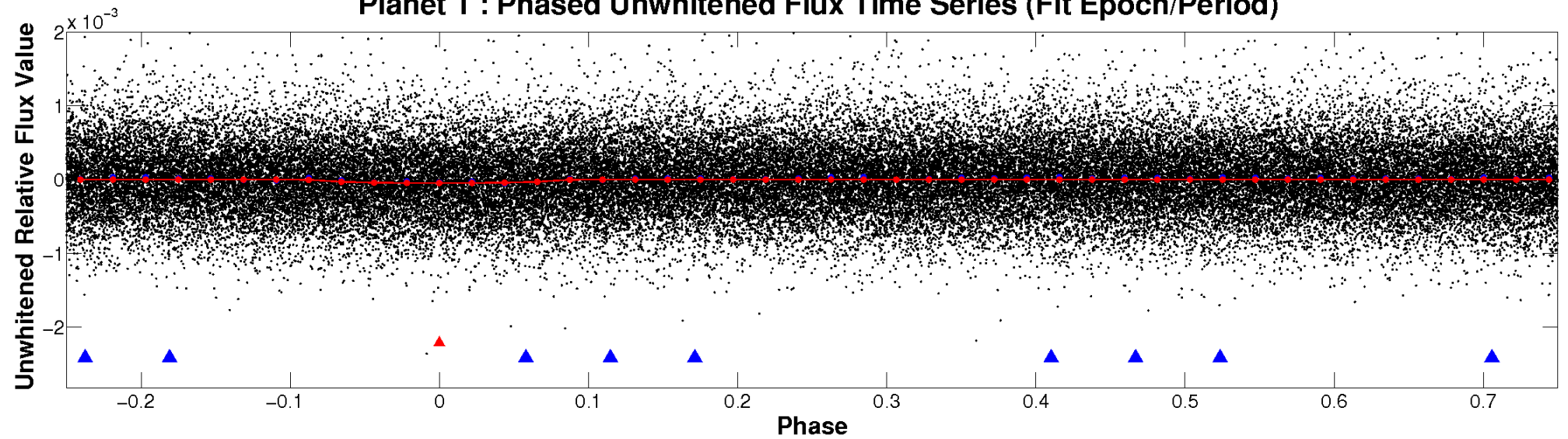
ALT Odd/Even

TCE 010340115-01

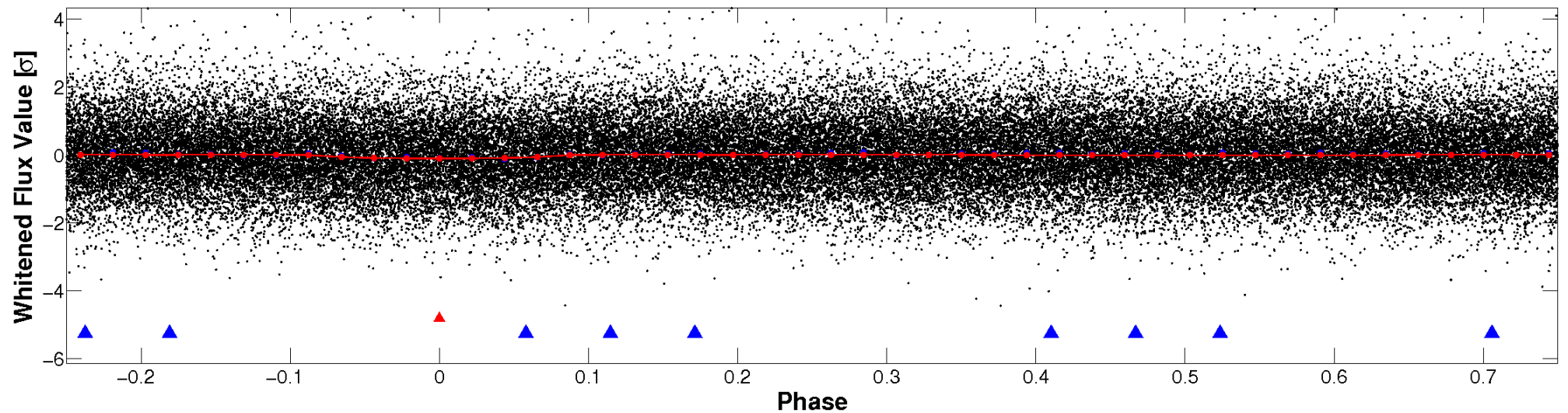


Non-Whitened Vs. Whitened Light Curve

Planet 1 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

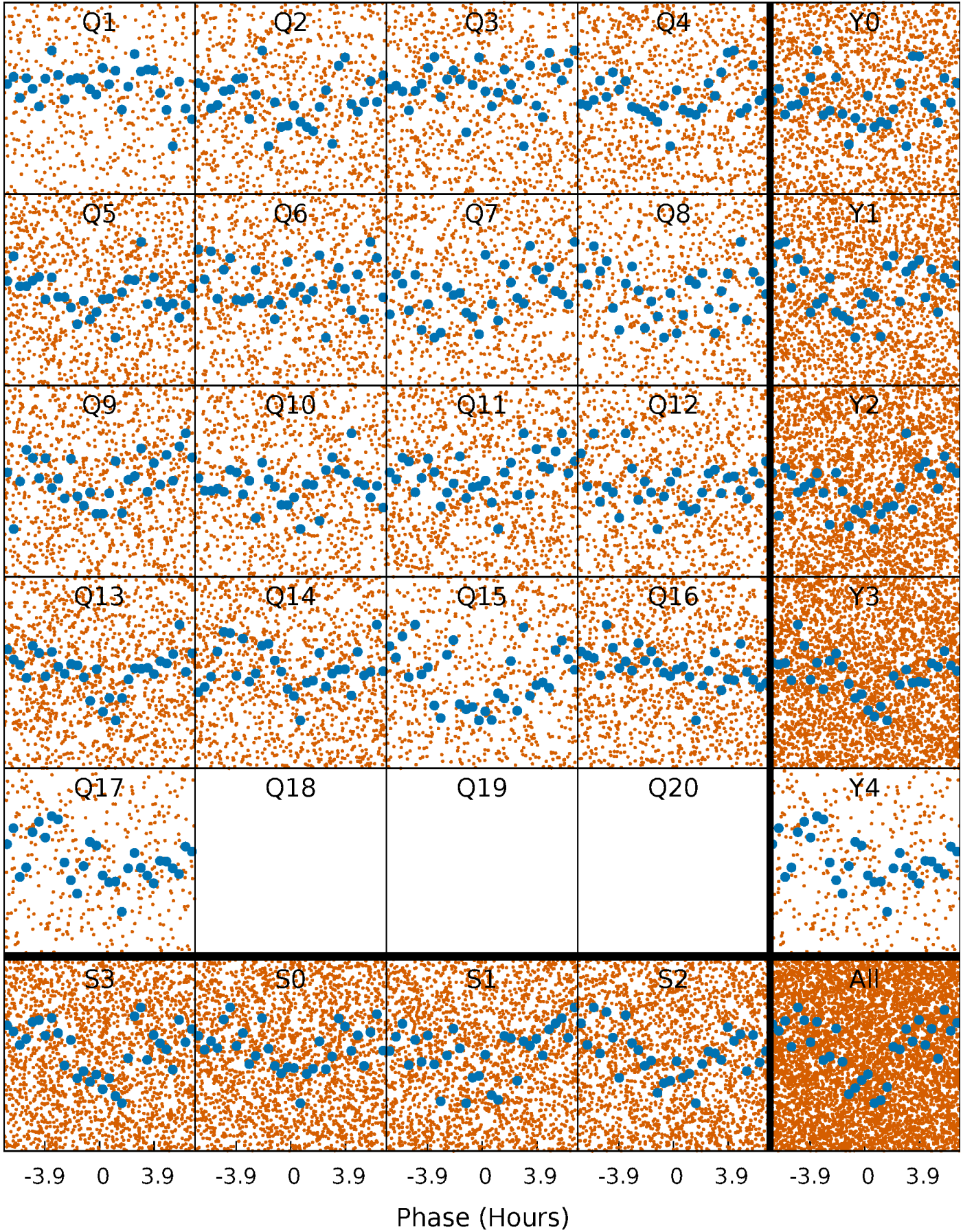


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



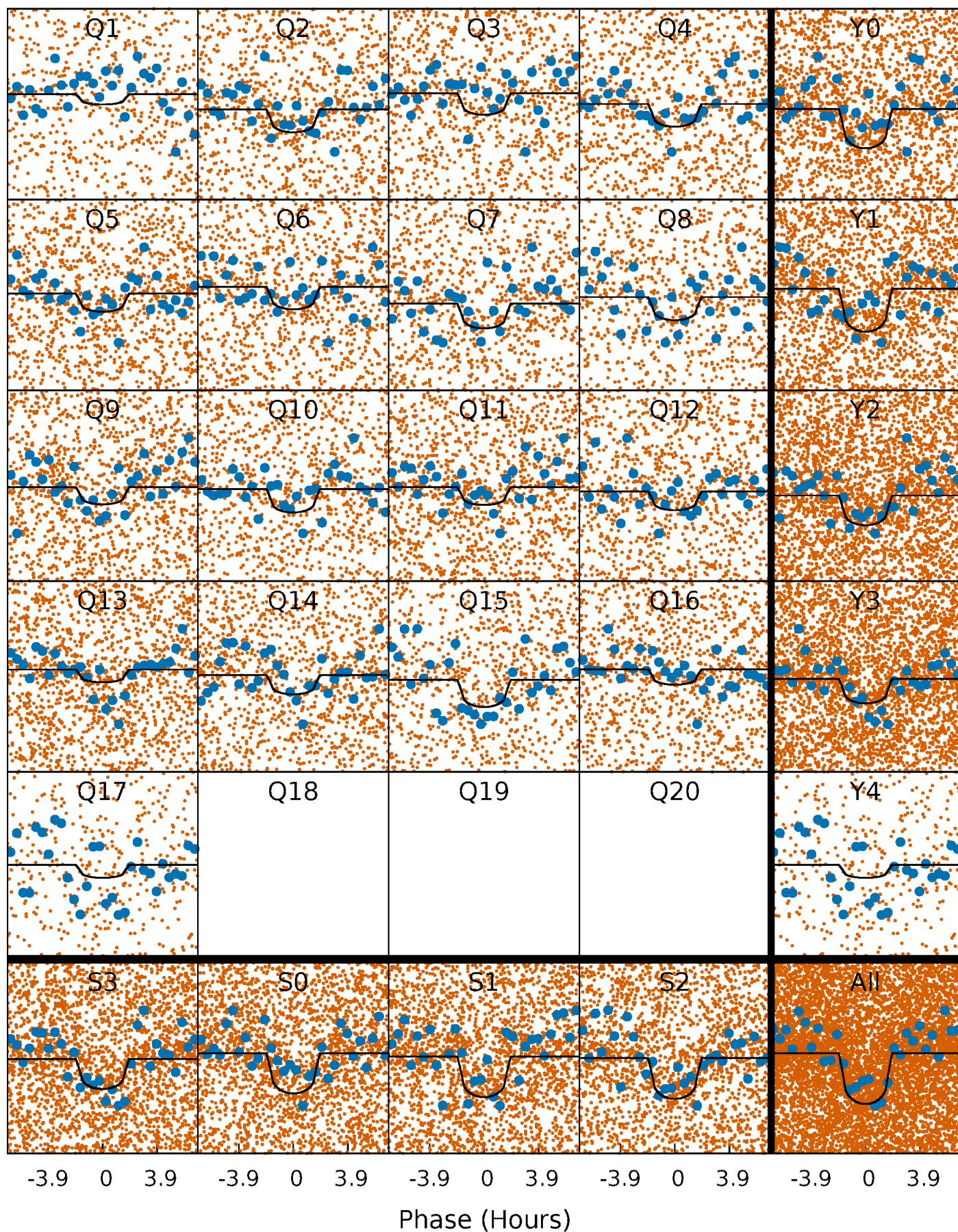
PDC Quarter-Phased Transit Curves

TCE 010340115-01 P= 0.933697 Days $T_0=131.557111$ (BKJD)



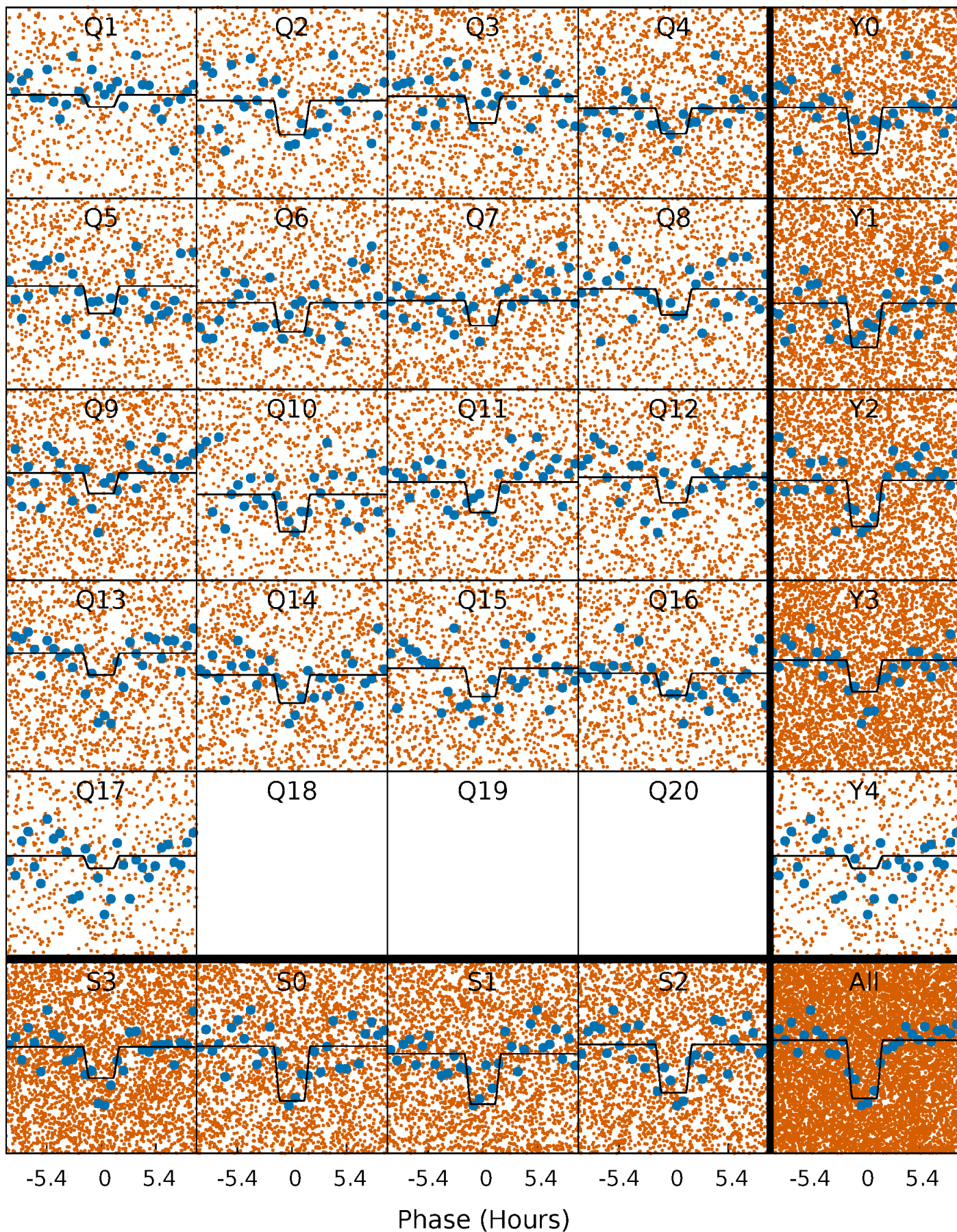
DV Quarter-Phased Transit Curves

TCE 010340115-01 P= 0.933697 Days $T_0=131.557111$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

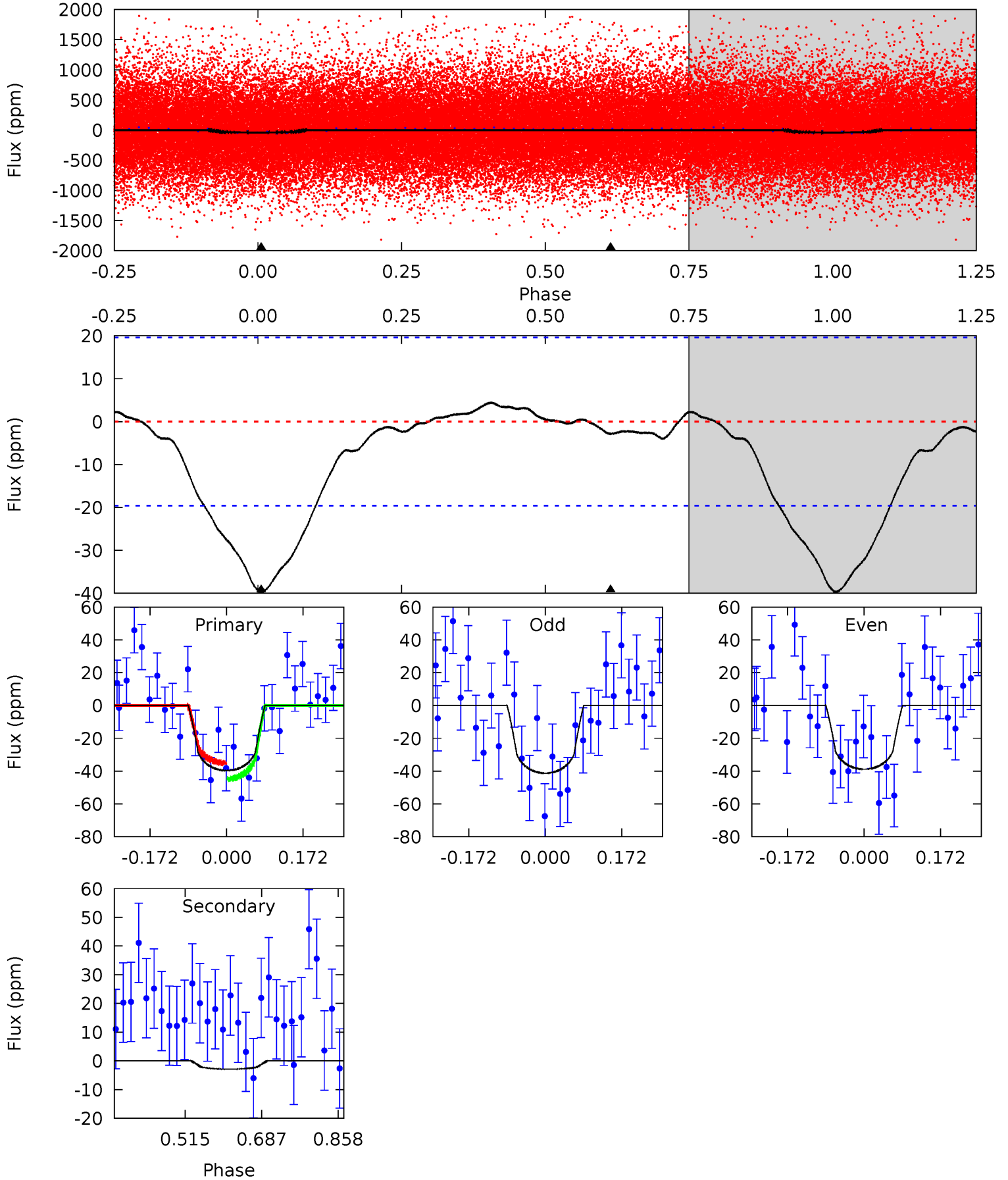
TCE 010340115-01 P= 0.933740 Days $T_0=131.527540$ (BKJD)



DV Model-Shift Uniqueness Test

010340115-01, P = 0.933697 Days, E = 130.623414 Days

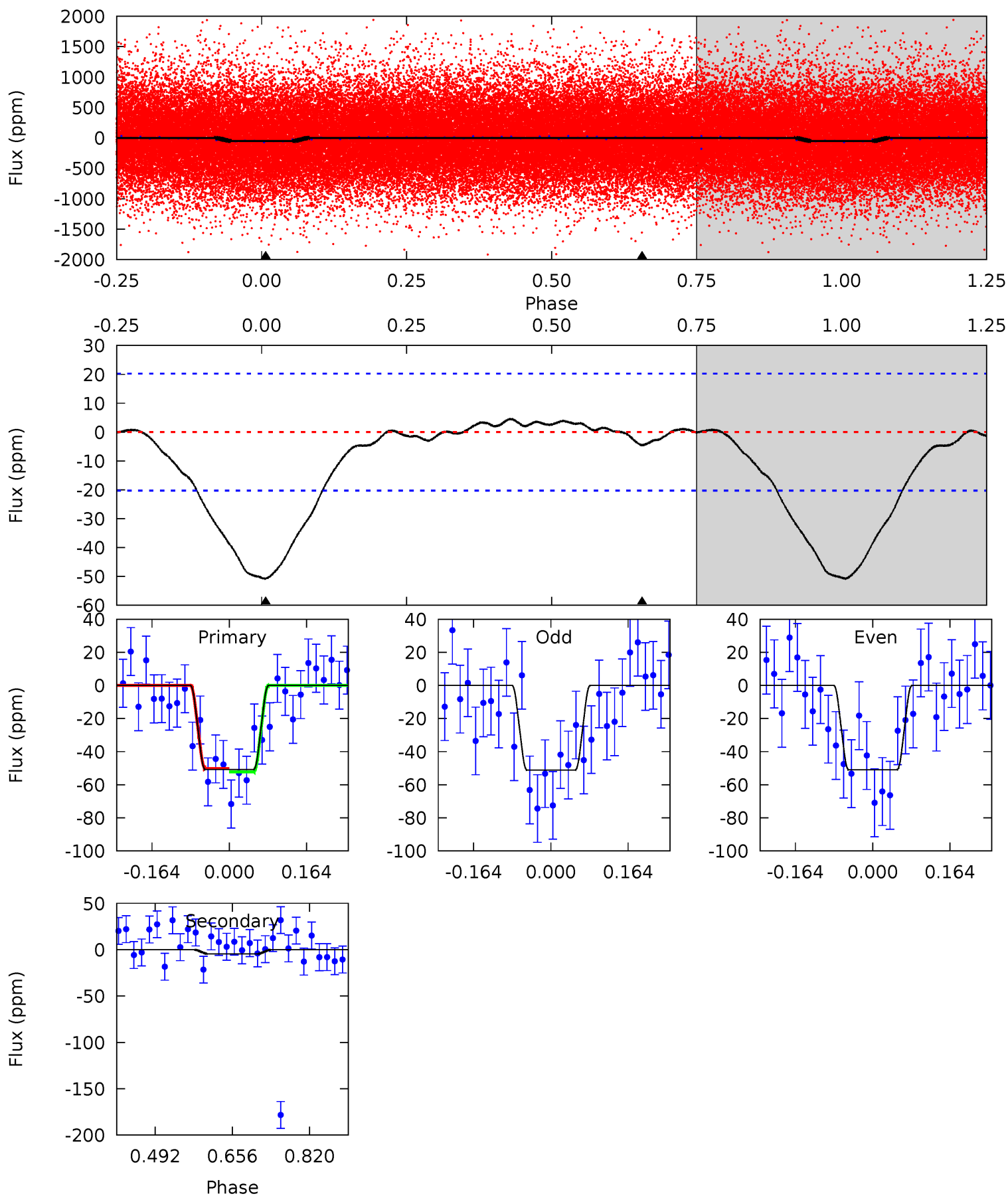
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.02	0.65	0	0	4.45	1.37	0.57	9.02	9.02	0.65	0.65	0.27	1.03	0.10	1.10



Alt Model-Shift Uniqueness Test

010340115-01, P = 0.933740 Days, E = 130.593800 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.2	1.00	0	0	4.46	1.39	0.68	11.2	11.2	1.00	1.00	0.02	1.11	0.08	0.23



Stellar Parameters For KIC 010340115

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5692^{+152}_{-169}	$4.547^{+0.033}_{-0.187}$	$-0.040^{+0.250}_{-0.300}$	$0.866^{+0.233}_{-0.078}$	$0.965^{+0.094}_{-0.115}$	$2.090^{+0.384}_{-0.976}$
	+3%/-3%	+1%/-4%	+625%/-750%	+27%/-9%	+10%/-12%	+18%/-47%
Source	PHO1	KIC0	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 010340115-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-3 ± 4	$0.69^{+0.38}_{-0.41}$	2462^{+166}_{-101}	2999^{+1413}_{-6285}	$0.831^{+5.254}_{-1.484}$
Alt.	-5 ± 5	$0.74^{+0.45}_{-0.40}$	2450^{+170}_{-100}	3328^{+1319}_{-6053}	$1.332^{+6.559}_{-1.270}$

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)

A_{obs} = Observed Albedo (Assuming $T=0$)

If a secondary eclipse is present, the system is likely an EB if $T_{obs} \gg T_{max}$ AND $A_{obs} \gg 1.0$

DV Centroid Data

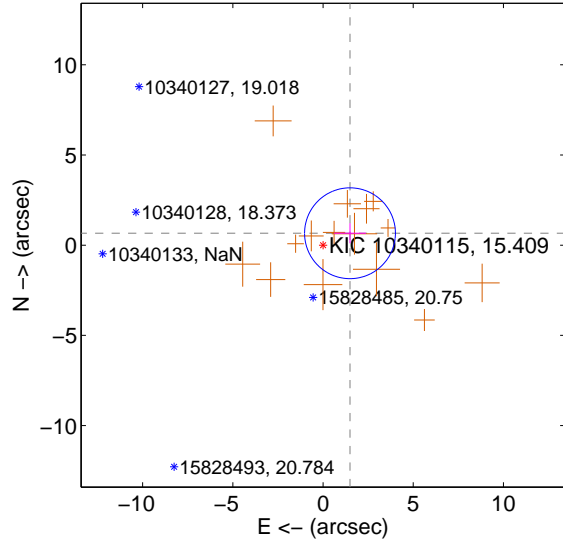
Supplemental centroid analysis for 010340115-01. Kepler magnitude: 15.41. Transit SNR 8.30

There are 0 quarters with good PRF difference image offsets

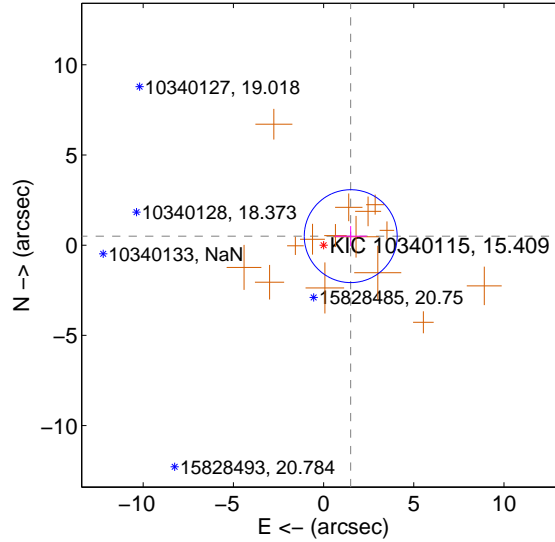
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.634 ± 0.839	1.95	-1.495 ± 0.884	0.661 ± 0.554
PRF-fit source offset from KIC position	1.585 ± 0.858	1.85	-1.504 ± 0.885	0.500 ± 0.554
photometric centroid source offset	4.75 ± 2.14	2.22	-4.54 ± 2.15	1.41 ± 2.01

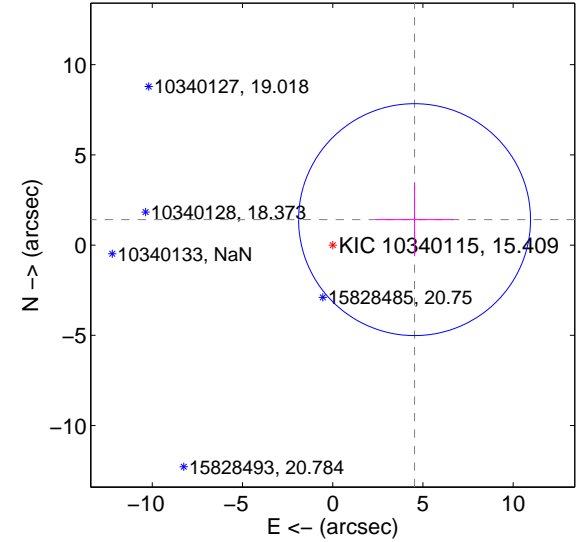
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

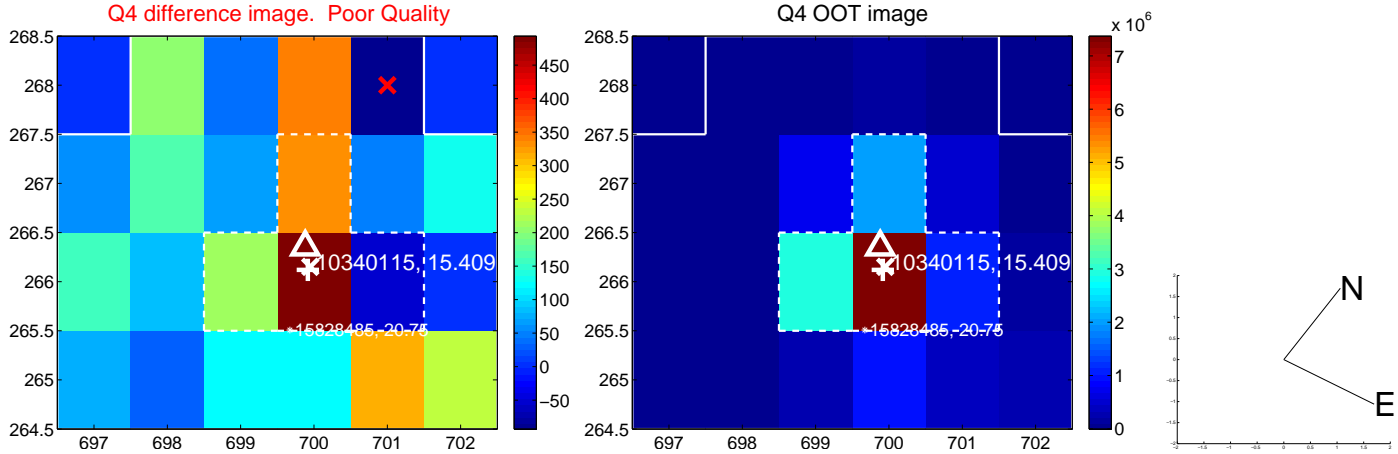
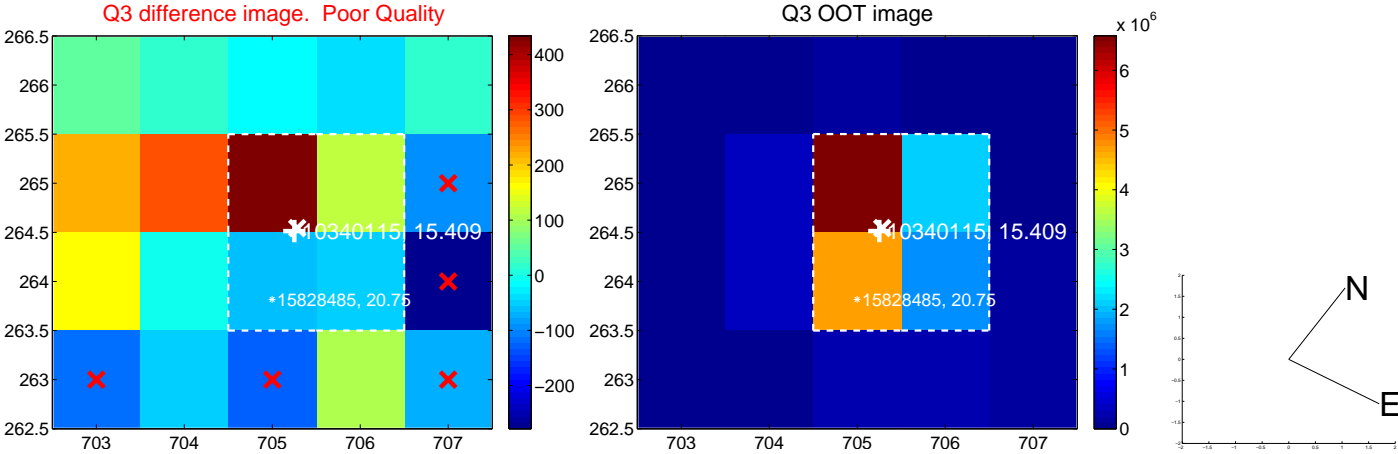
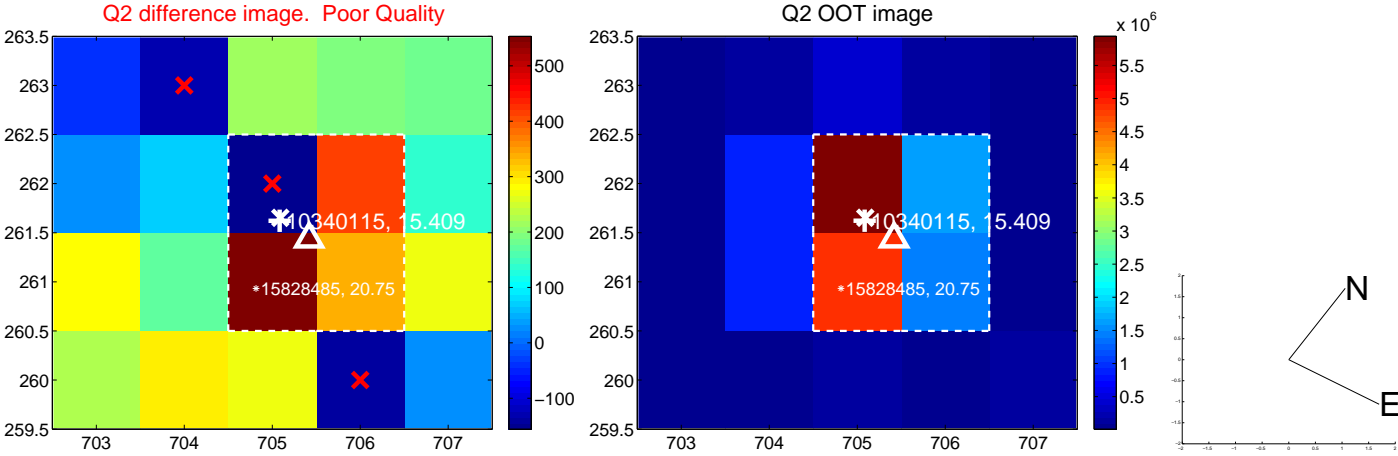
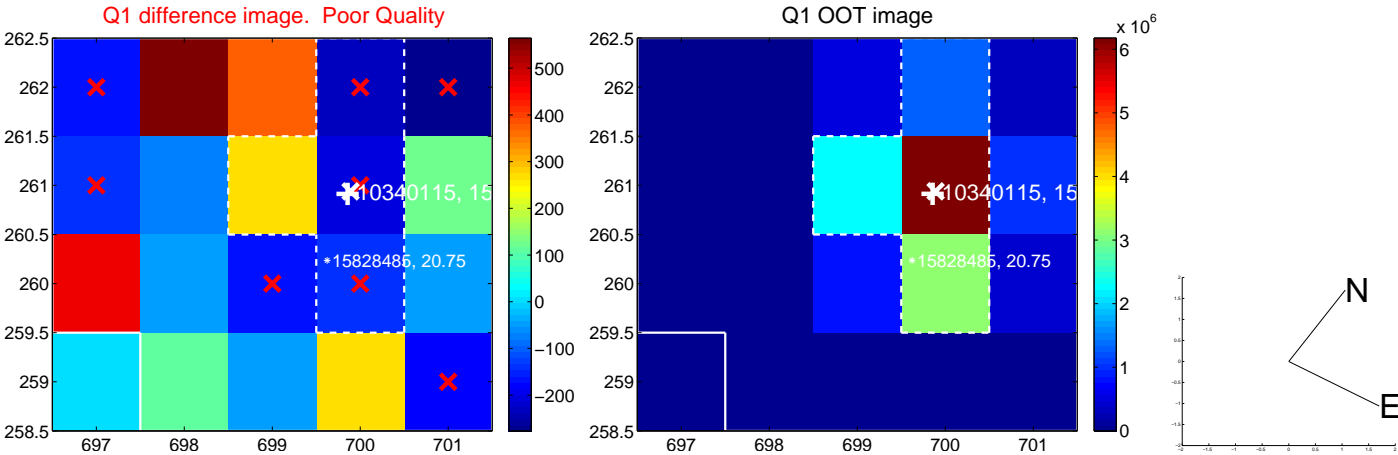


offset from photometric centroids

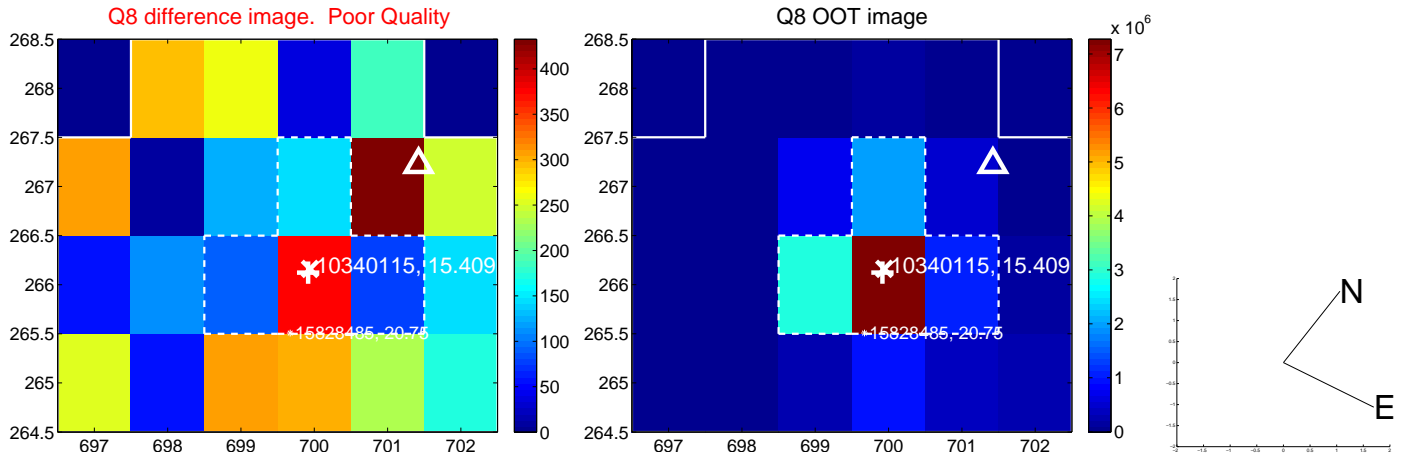
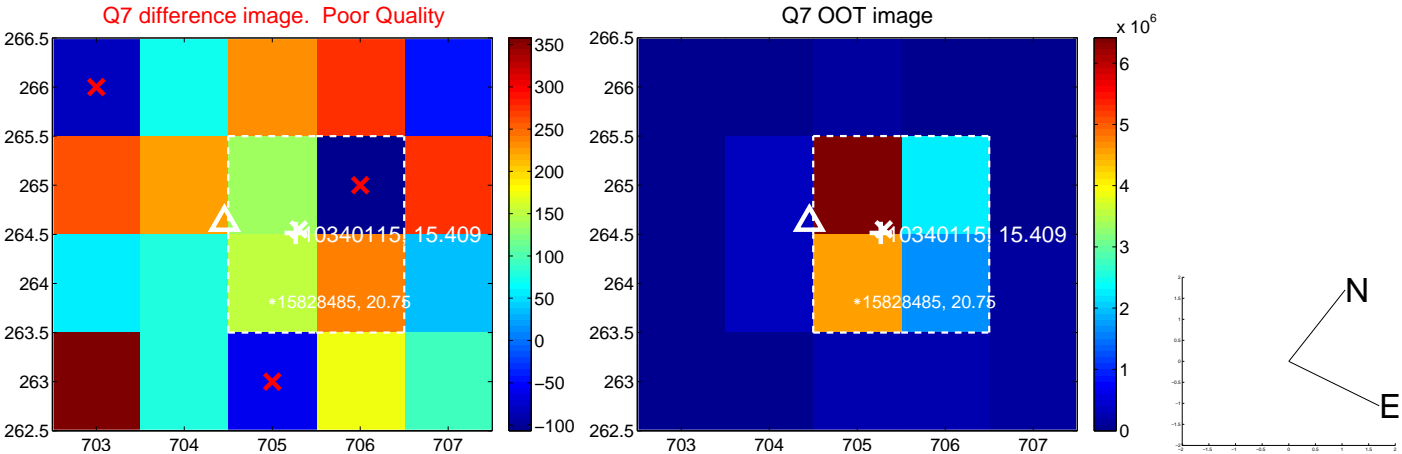
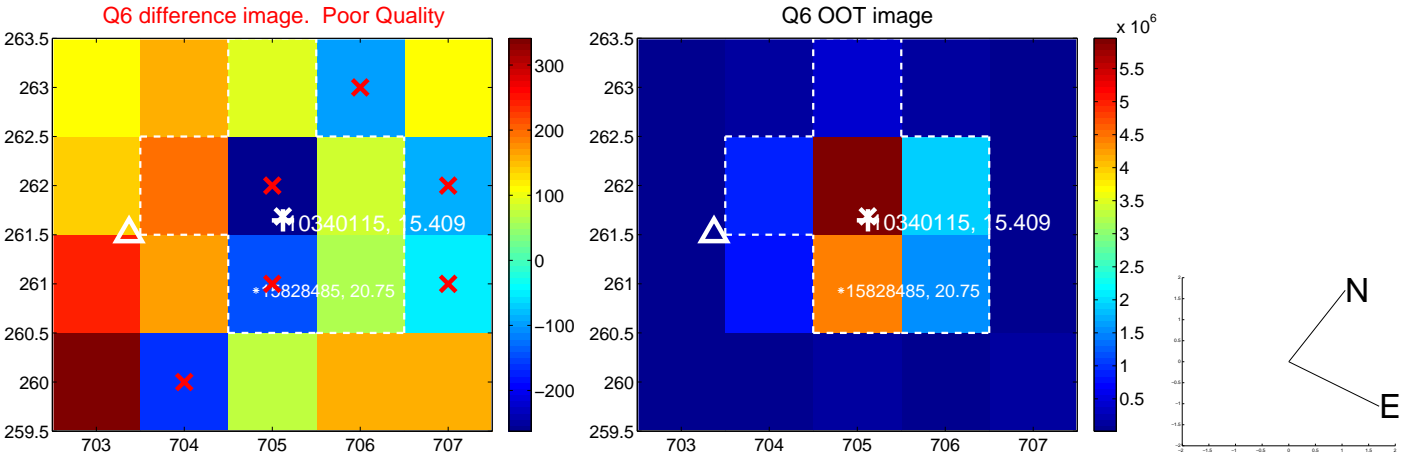
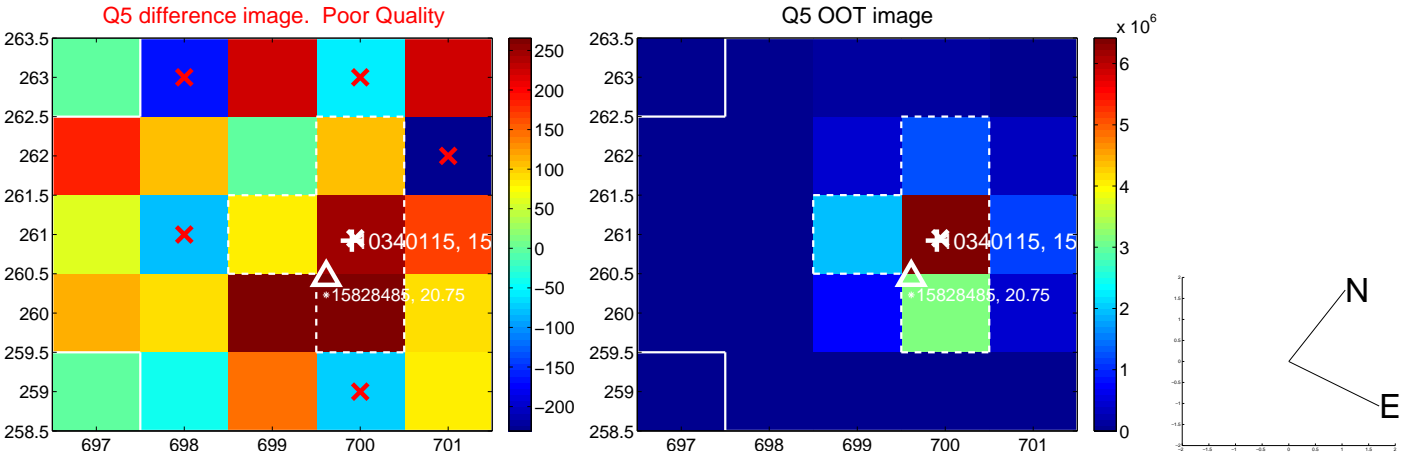


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

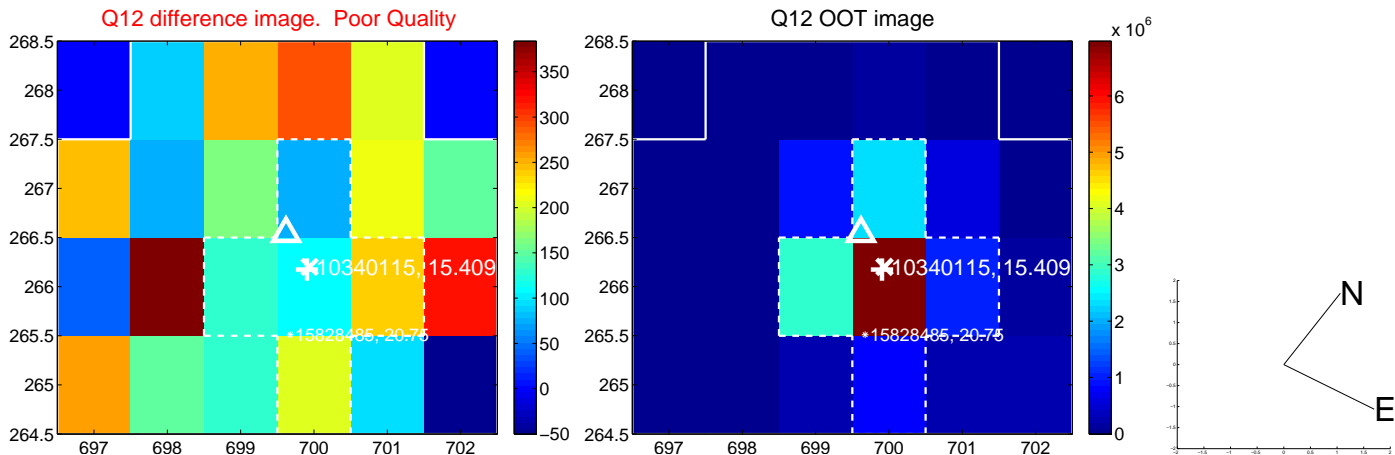
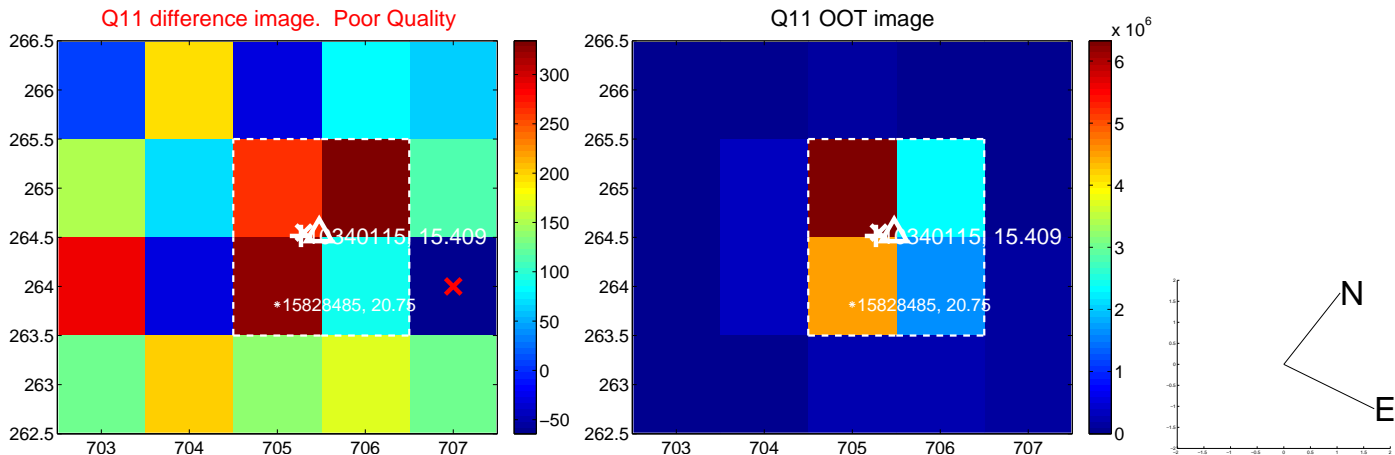
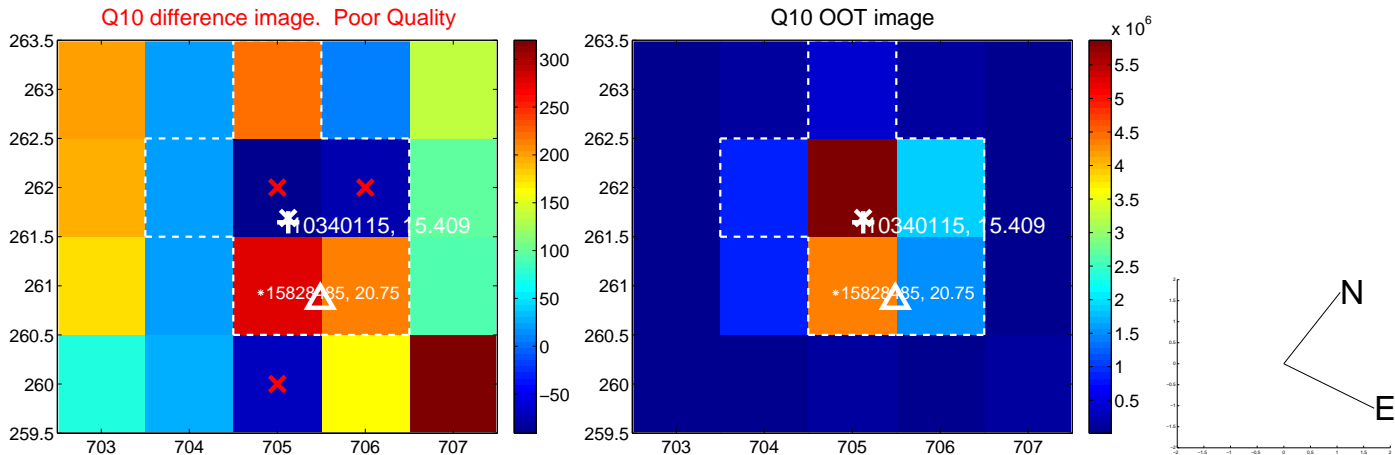
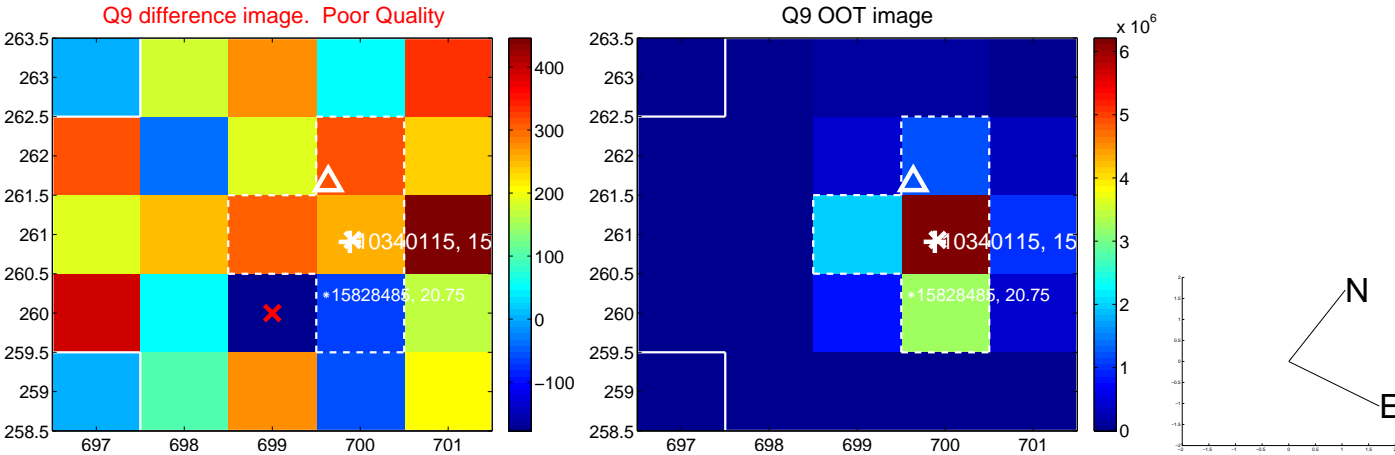
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



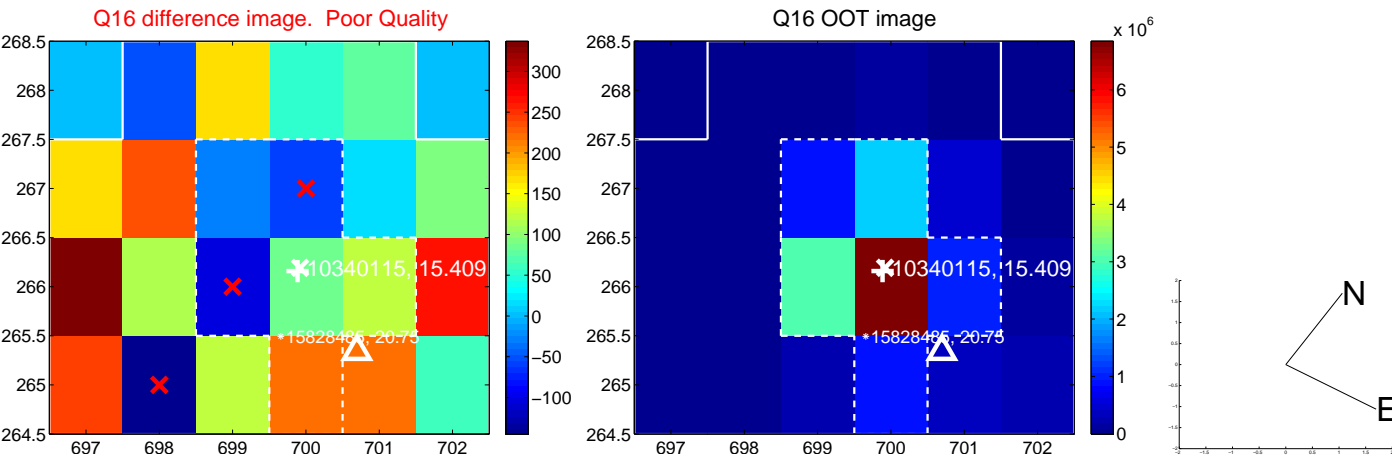
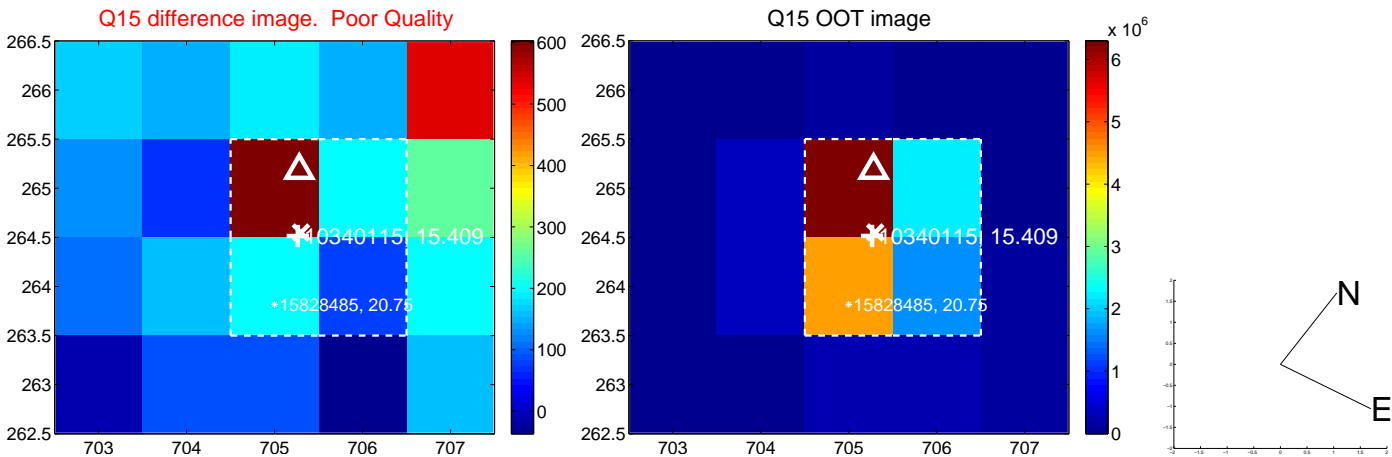
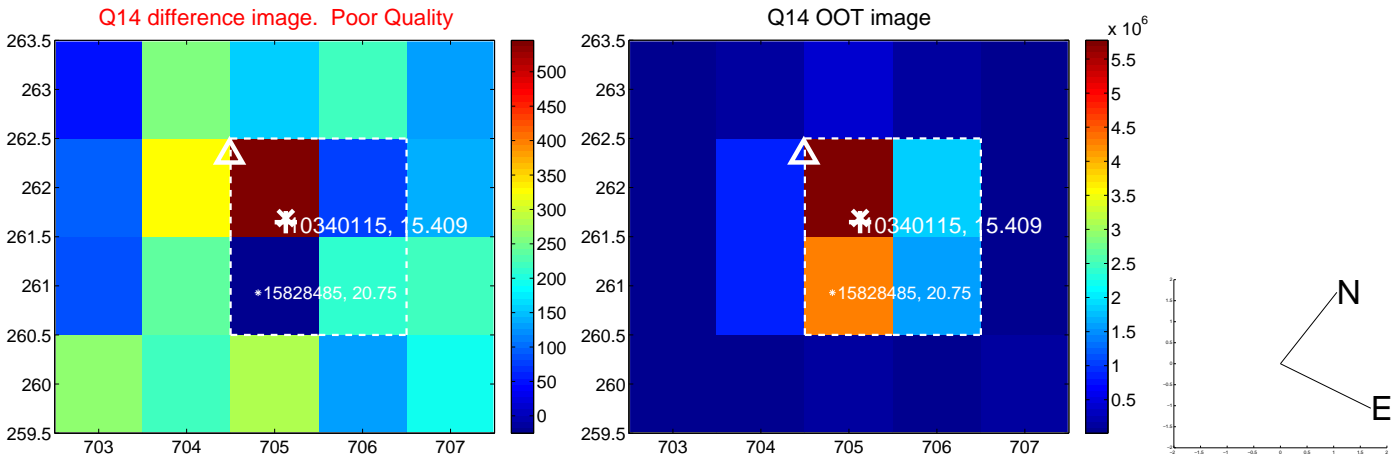
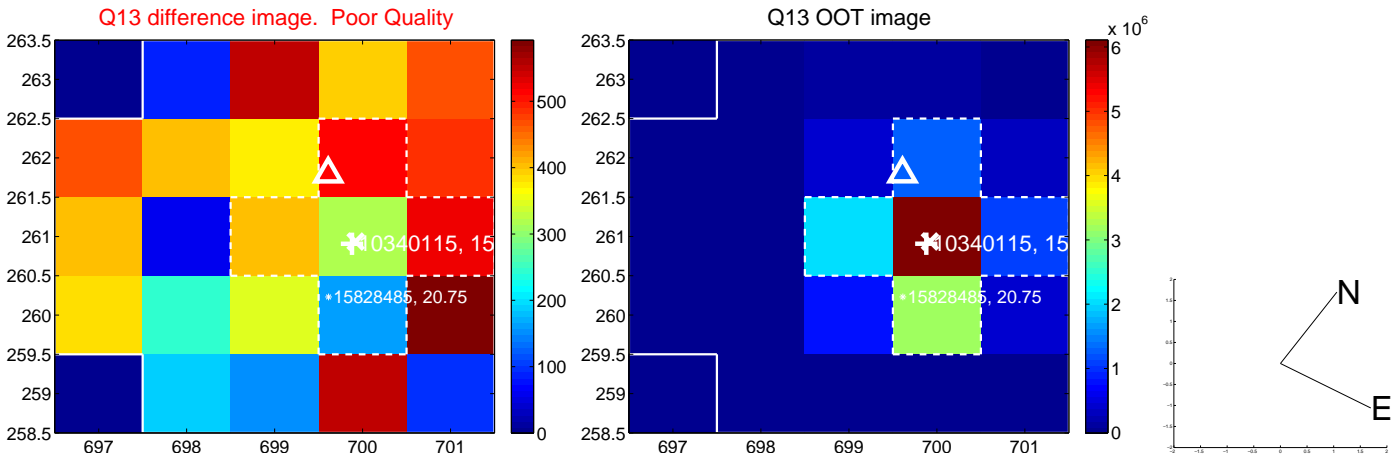
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



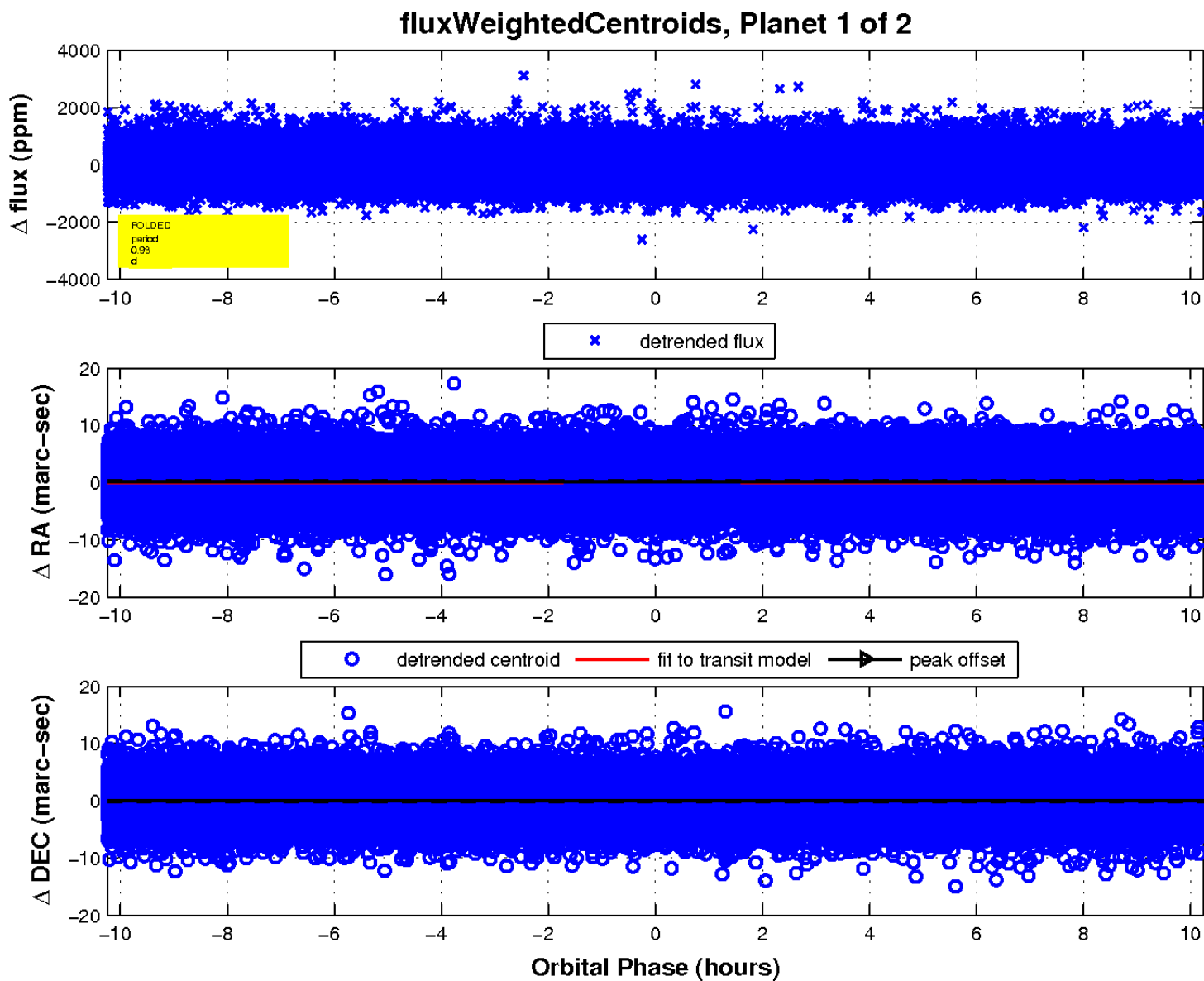
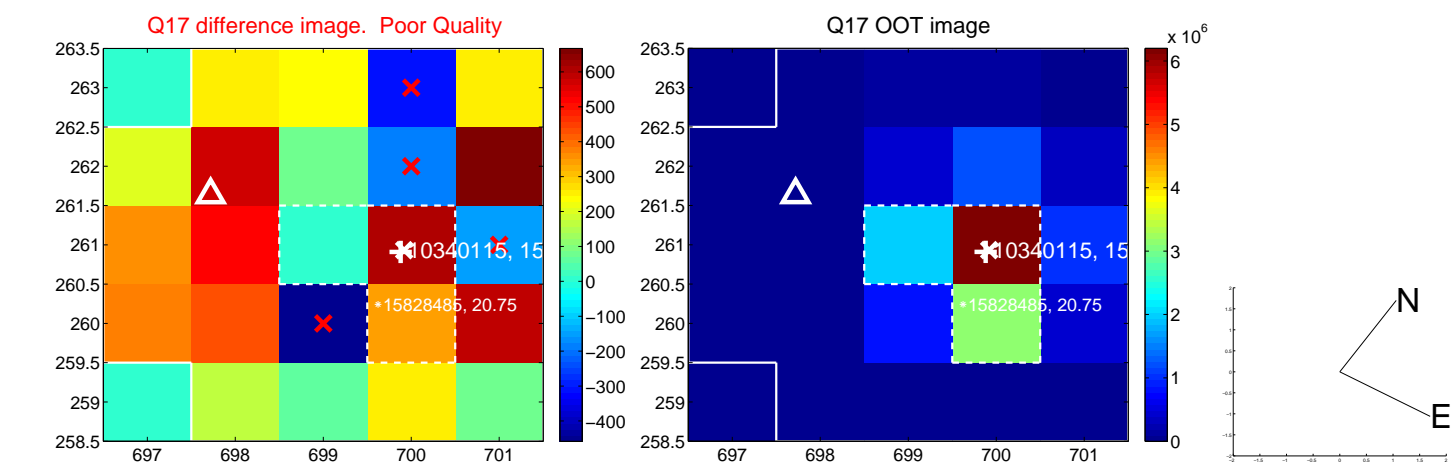
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

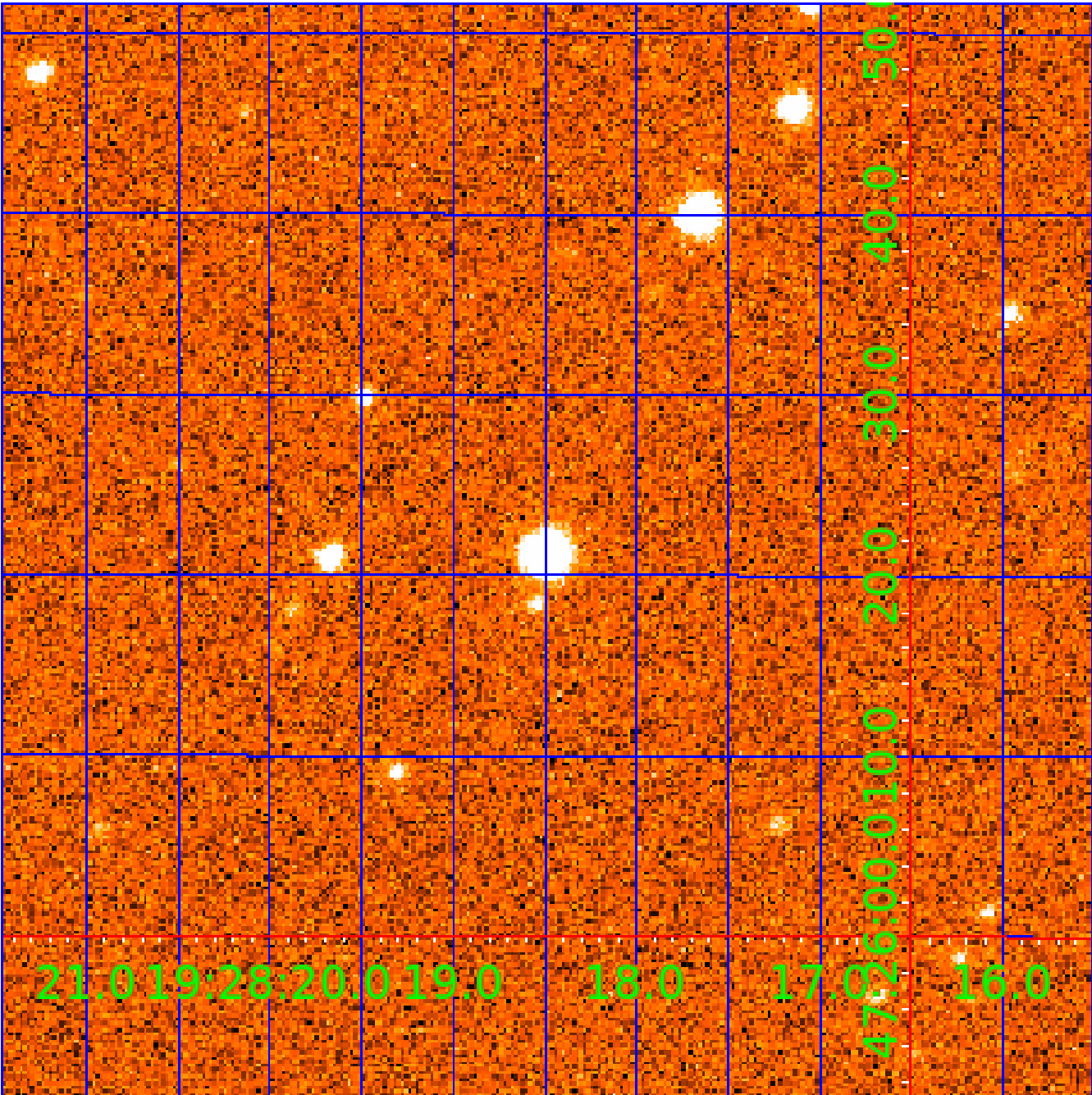


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010340115

Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R_{\star} (R_{\odot})	T_{\star} (K)	R_p (R_{\oplus})	S_p (S_{\oplus})
010340115-01	OBS	No	0.933697	131.557111	46.9	3.414	8.6	8.3	0.87	5692	0.62	2067.08
010340115-02	OBS	No	180.532438	139.685737	709.4	7.890	8.3	7.9	0.87	5692	2.56	1.85

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010340115-01	OBS	FP	0.00	1	0	1	1	LPP_DV—HALO_GHOST—EPHEM_MATCH
010340115-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

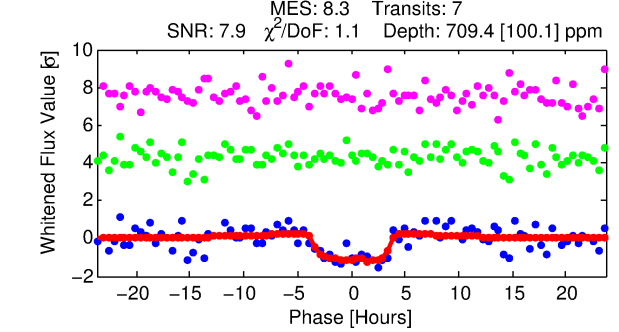
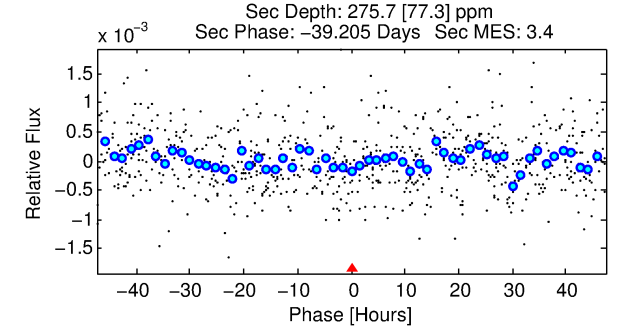
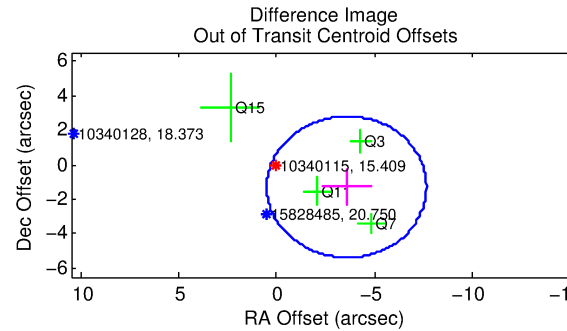
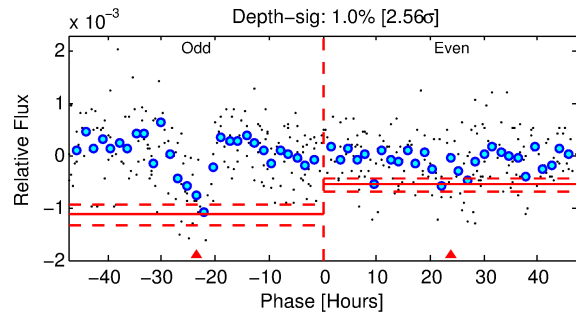
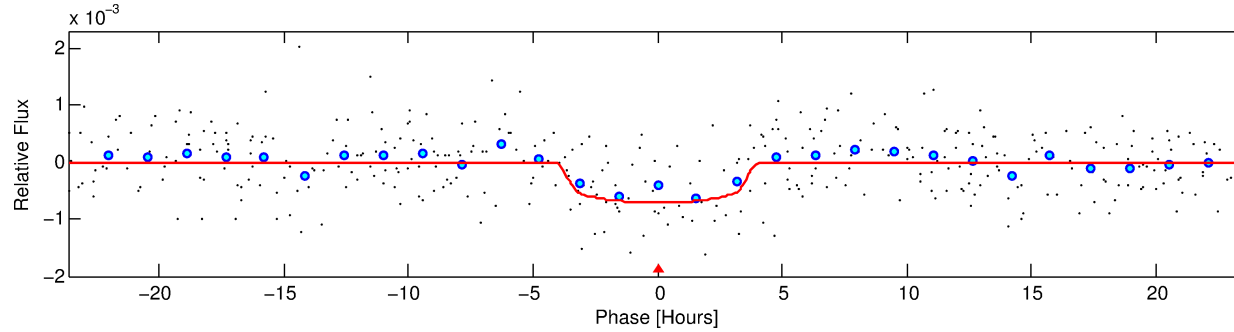
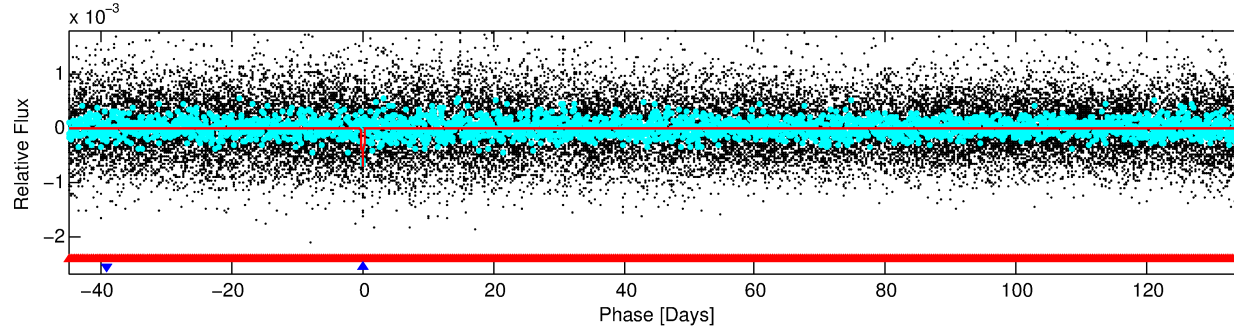
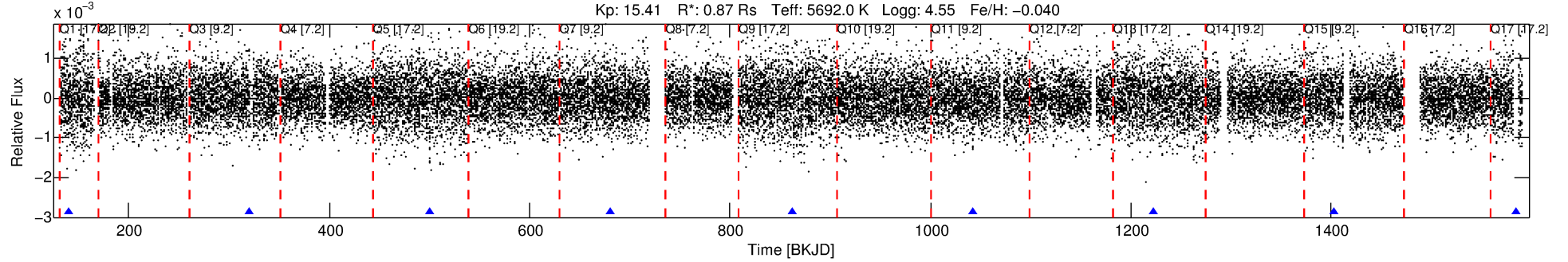
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010340115-02

No Significant Match Found

DV One-Page Summary

KIC: 10340115 Candidate: 2 of 2 Period: 180.532 d



DV Fit Results:

Period = 180.53244 [0.00432] d
Epoch = 139.6857 [0.0212] BKJD
Rp/R* = 0.0271 [0.0138]
a/R* = 112.20 [247.10]
b = 0.80 [1.00]
Seff = 1.85 [0.66]
Teq = 297 [27] K
Rp = 2.56 [1.48] Re
a = 0.6177 [0.1419] AU
Ag = 8800.73 [9774.83] [0.90 σ]
Teffp = 4453 [1185] K [3.51 σ]

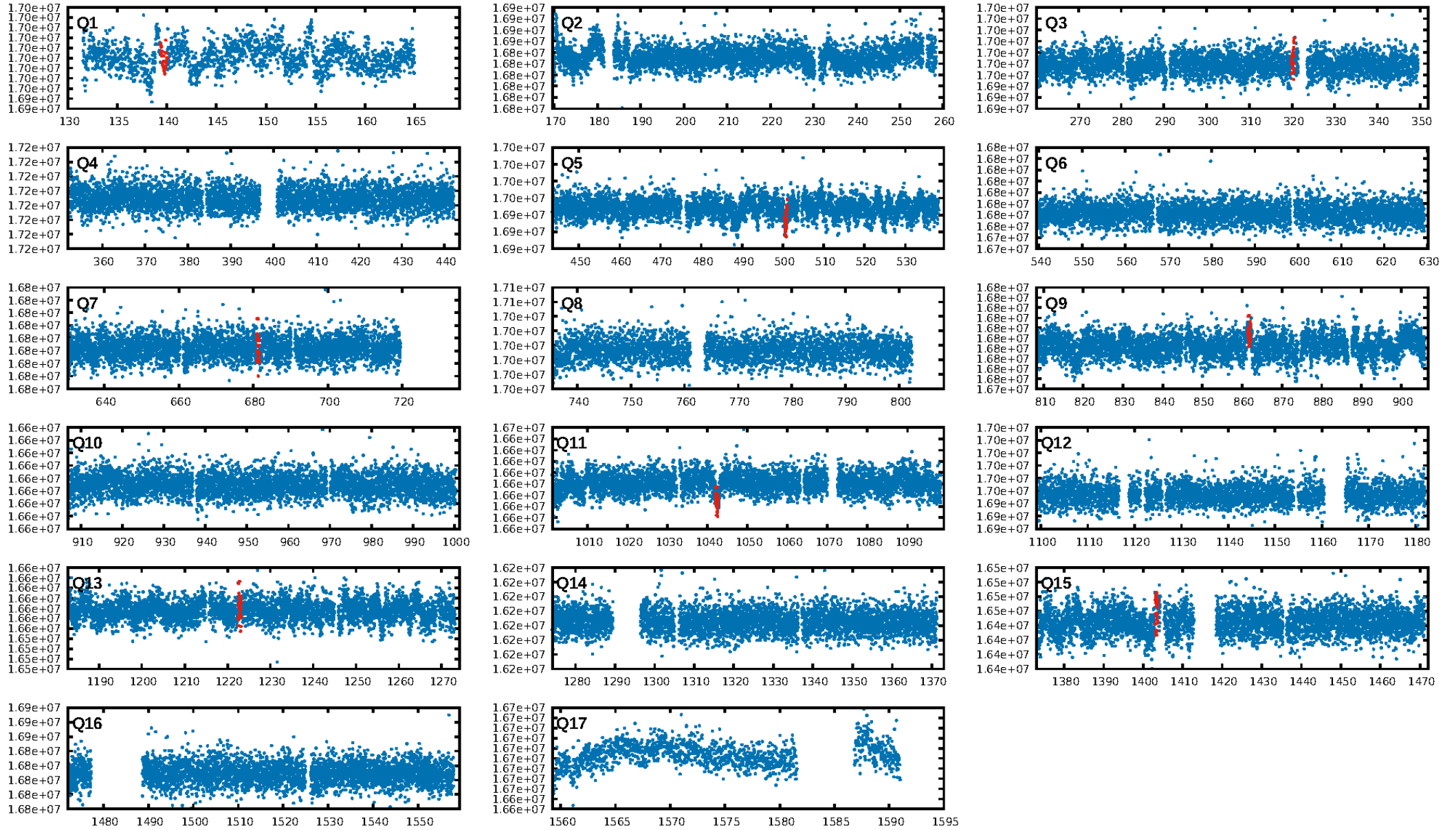
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [501.38 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.1%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.20e-13
RollingBand-fgt: 1.00 [6/6]
GhostDiagnostic-chr: -0.8247
Centroid-sig: 2.5%
Centroid-so: 1.986 arcsec [1.23 σ]
OotOffset-rm: 3.810 arcsec [2.80 σ]
OotOffset-st: 0/4/0/0 [4]
KicOffset-rm: 3.930 arcsec [3.12 σ]
KicOffset-st: 0/4/0/0 [4]
DiffImageQuality-fgm: 0.00 [0/4]
DiffImageOverlap-fno: 0.00 [0/8]

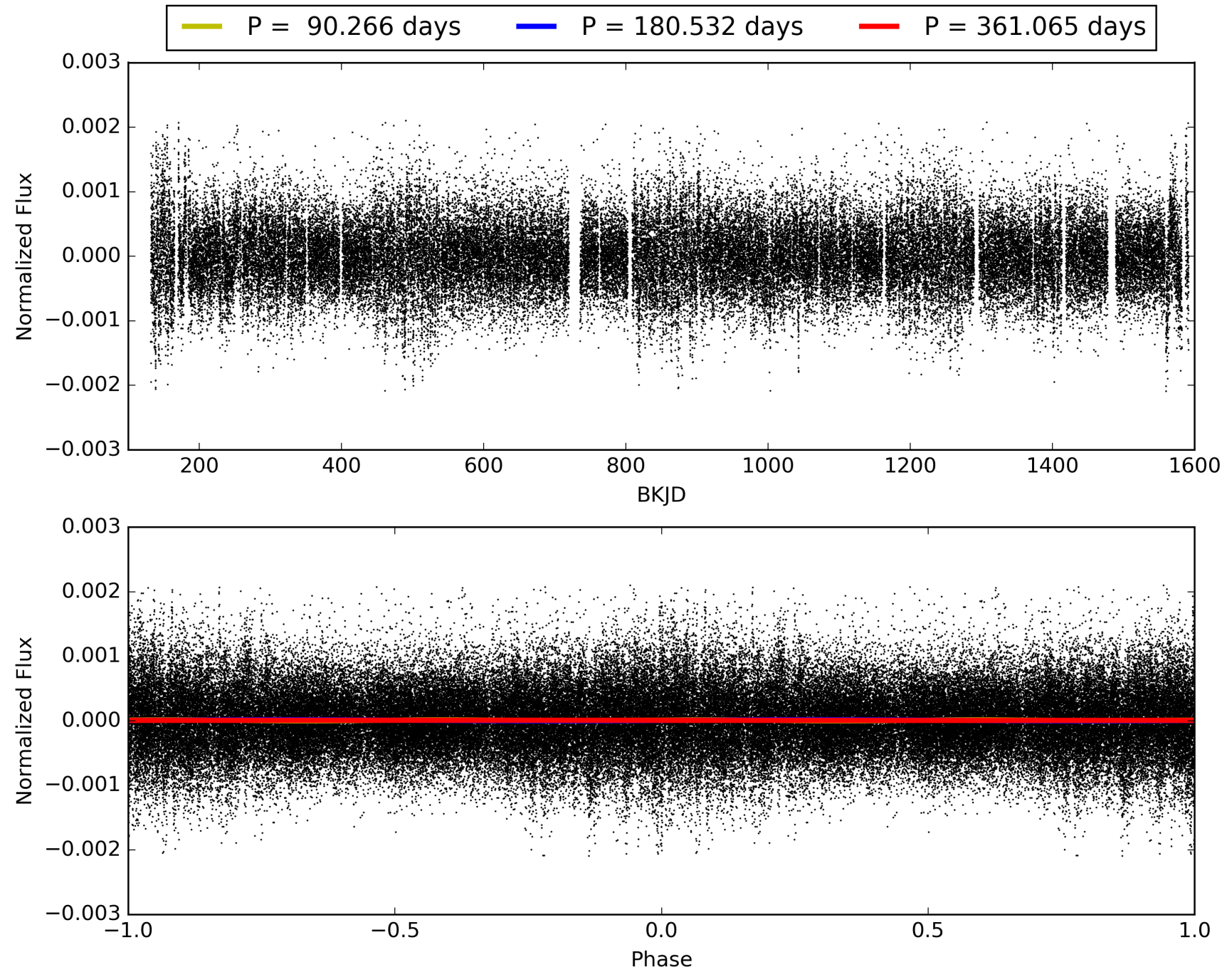
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 04:20:03 Z

This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 010340115-02, PDC Light Curves

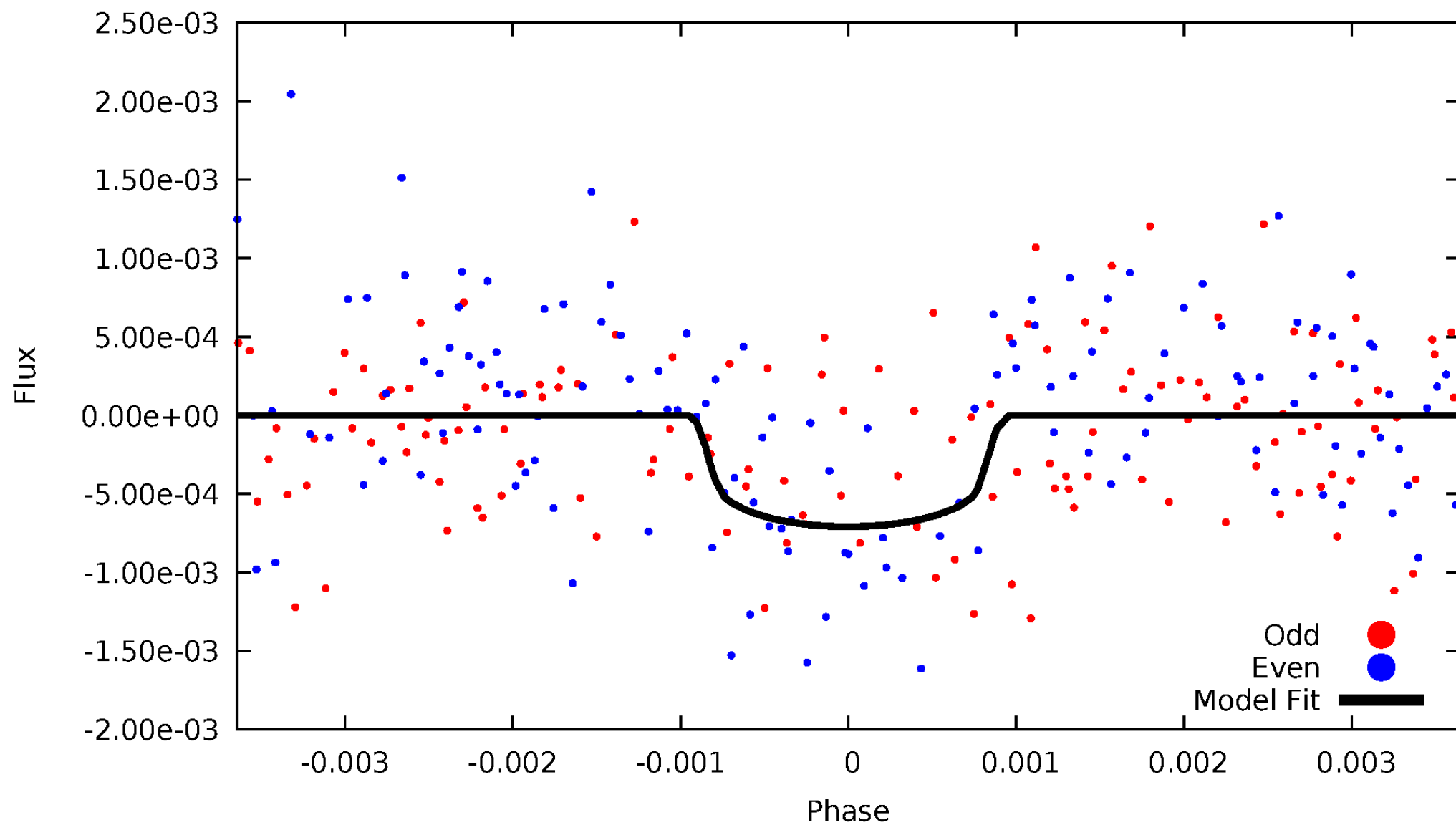


TCE 010340115-02



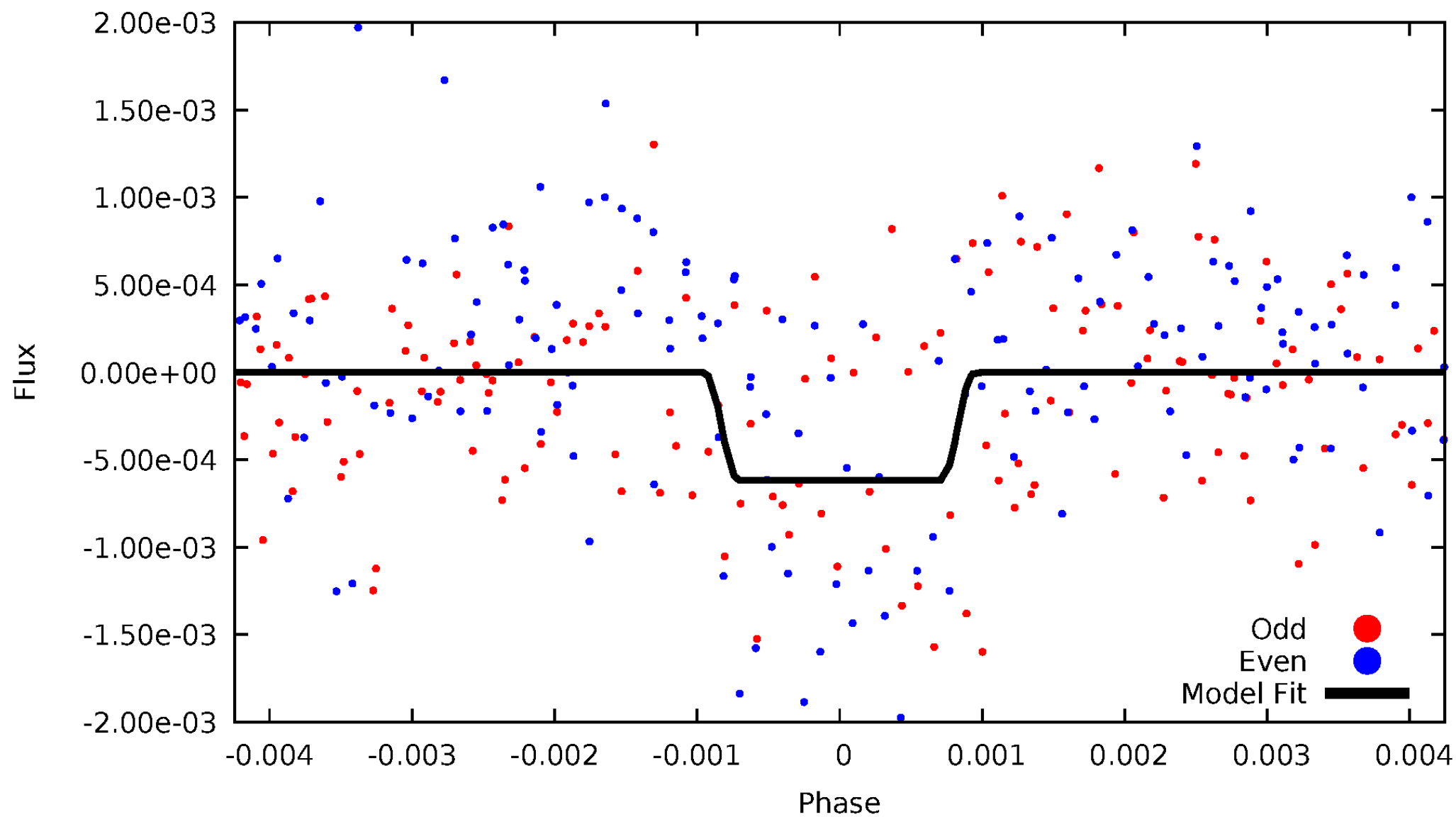
DV Odd/Even

TCE 010340115-02



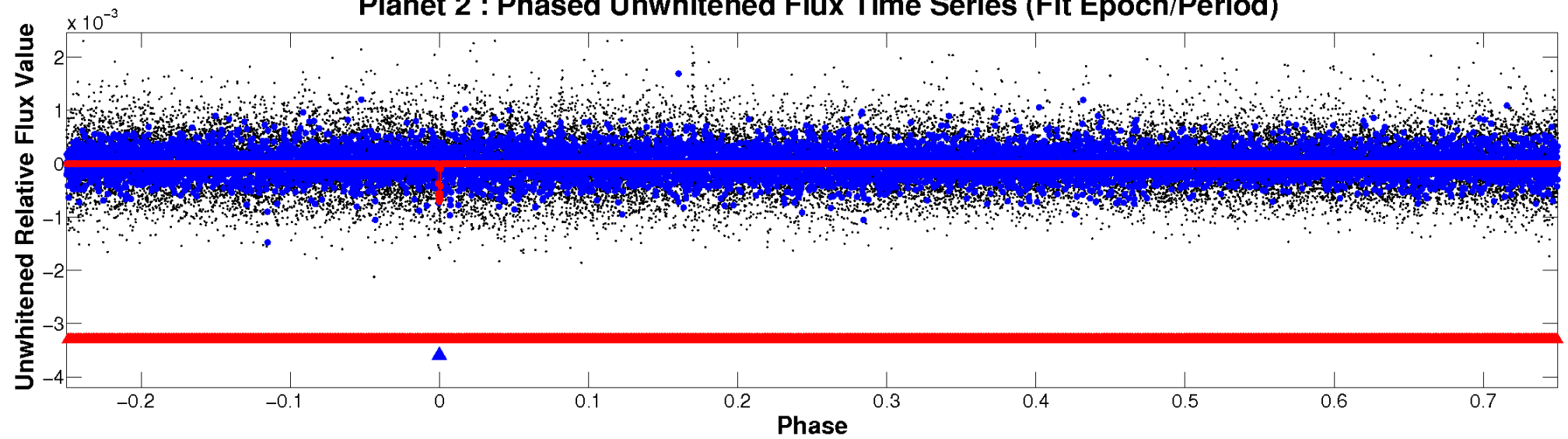
ALT Odd/Even

TCE 010340115-02

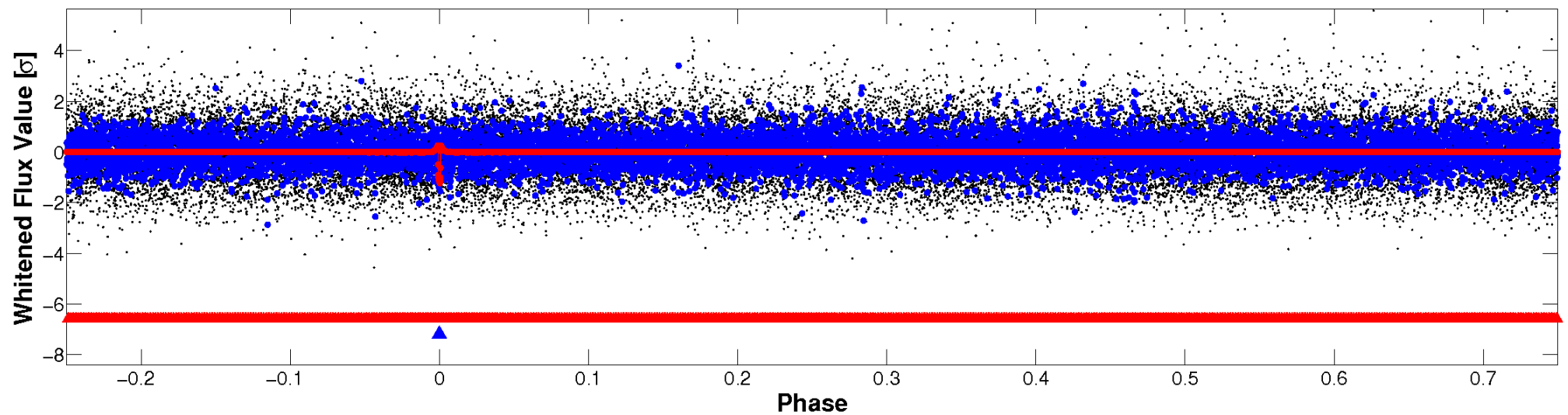


Non-Whitened Vs. Whitened Light Curve

Planet 2 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

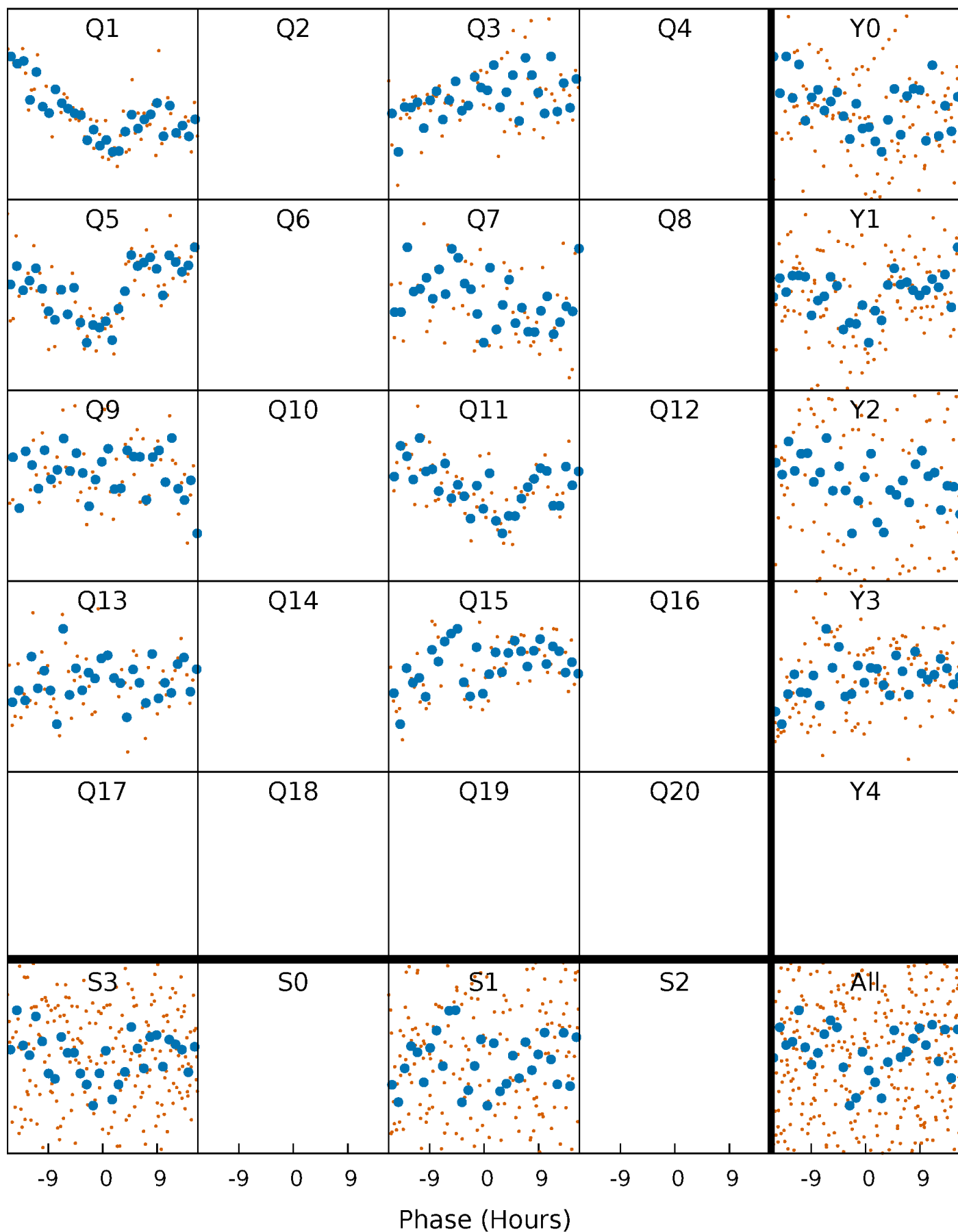


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



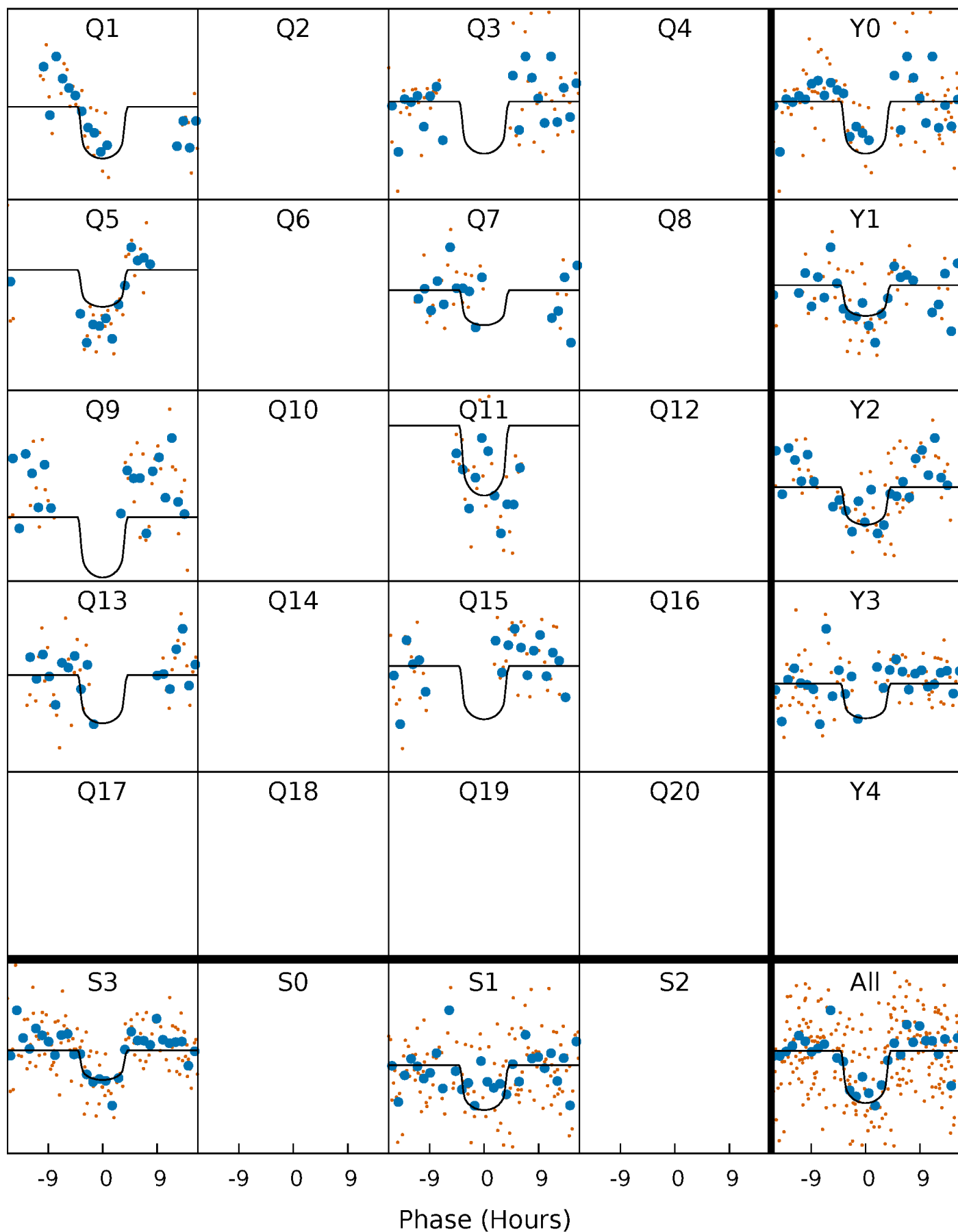
PDC Quarter-Phased Transit Curves

TCE 010340115-02 P=180.532438 Days $T_0=139.685737$ (BKJD)



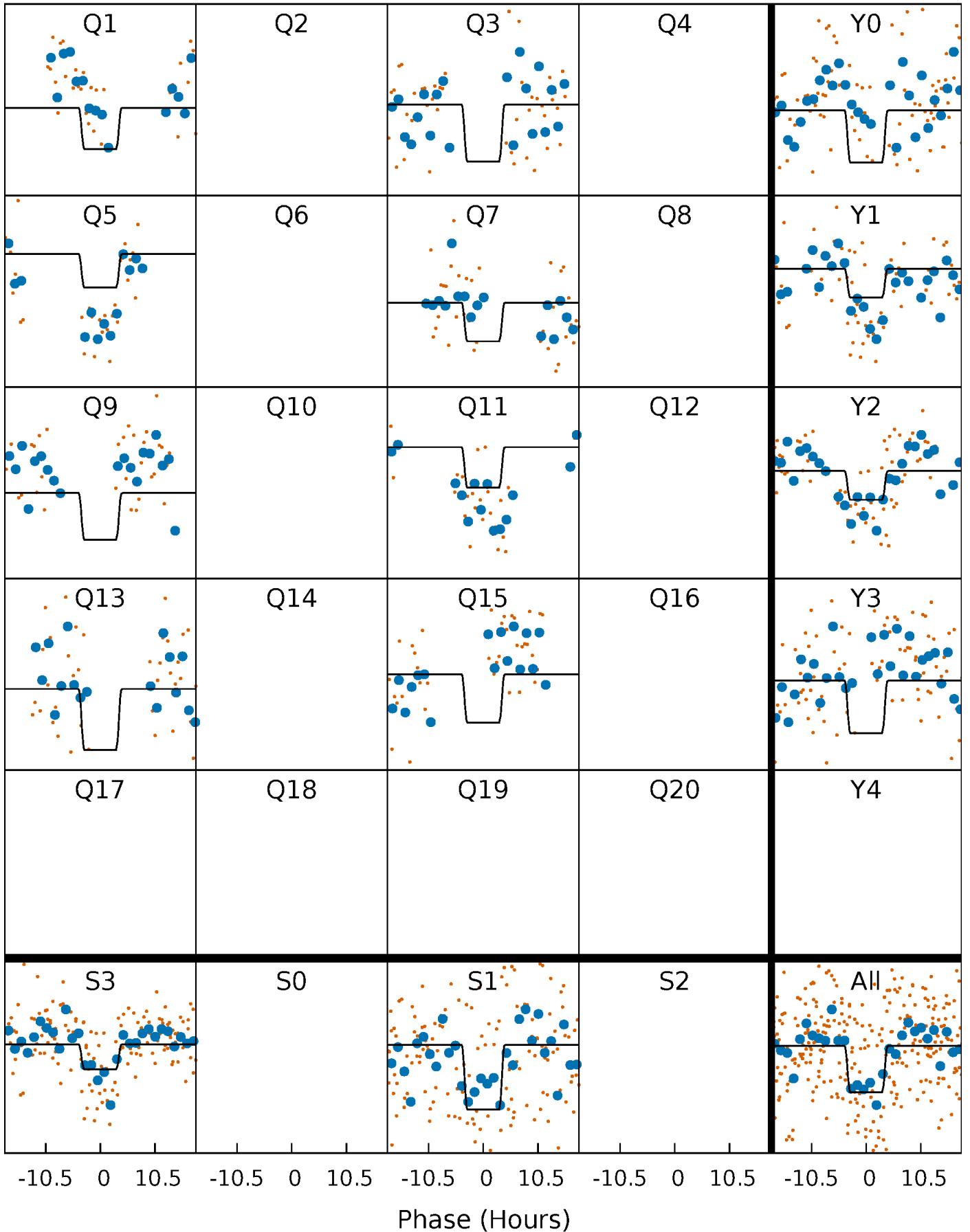
DV Quarter-Phased Transit Curves

TCE 010340115-02 P=180.532438 Days $T_0=139.685737$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

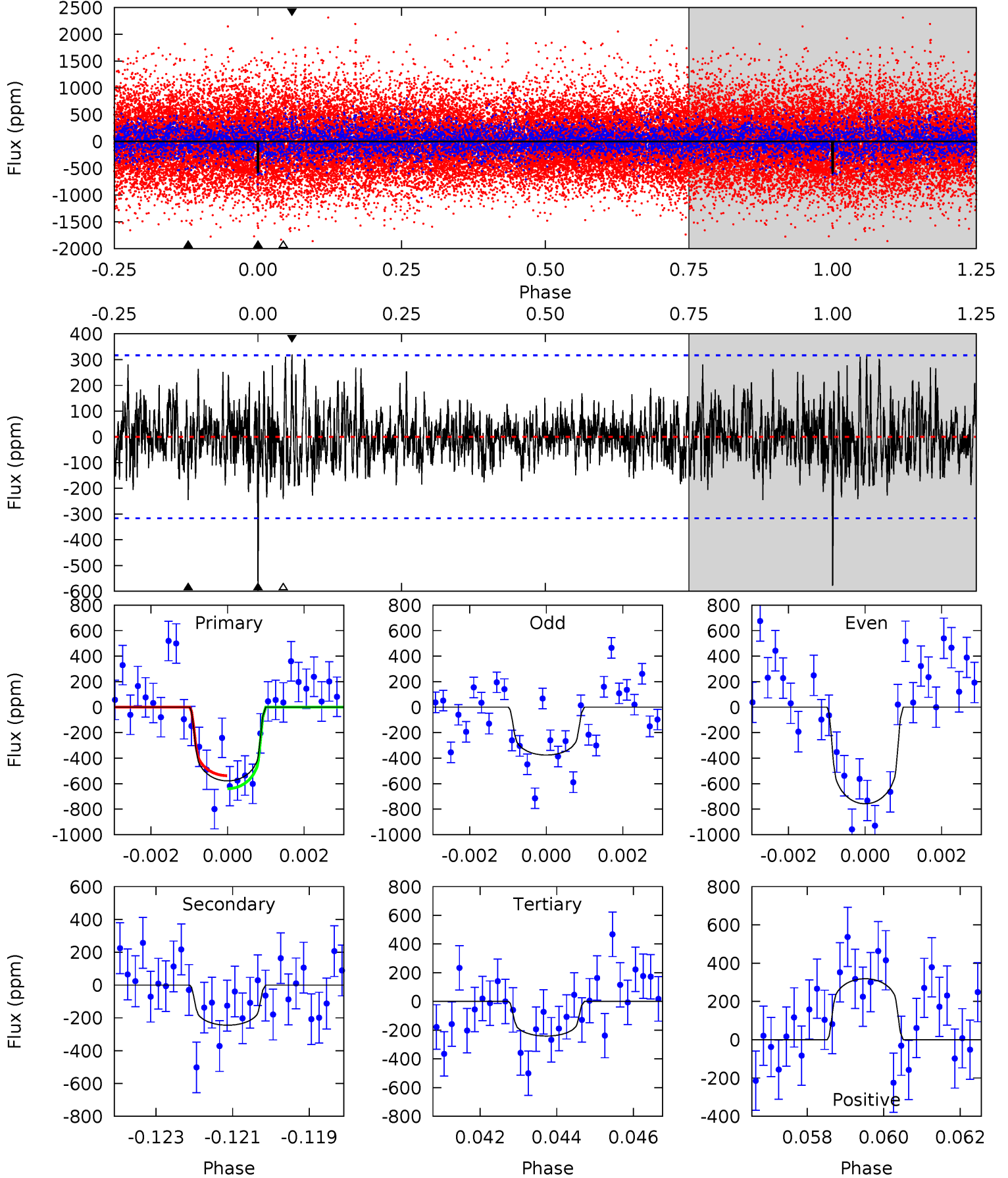
TCE 010340115-02 P=180.537314 Days $T_0=139.676678$ (BKJD)



DV Model-Shift Uniqueness Test

010340115-02, P = 180.532438 Days, E = 139.685737 Days

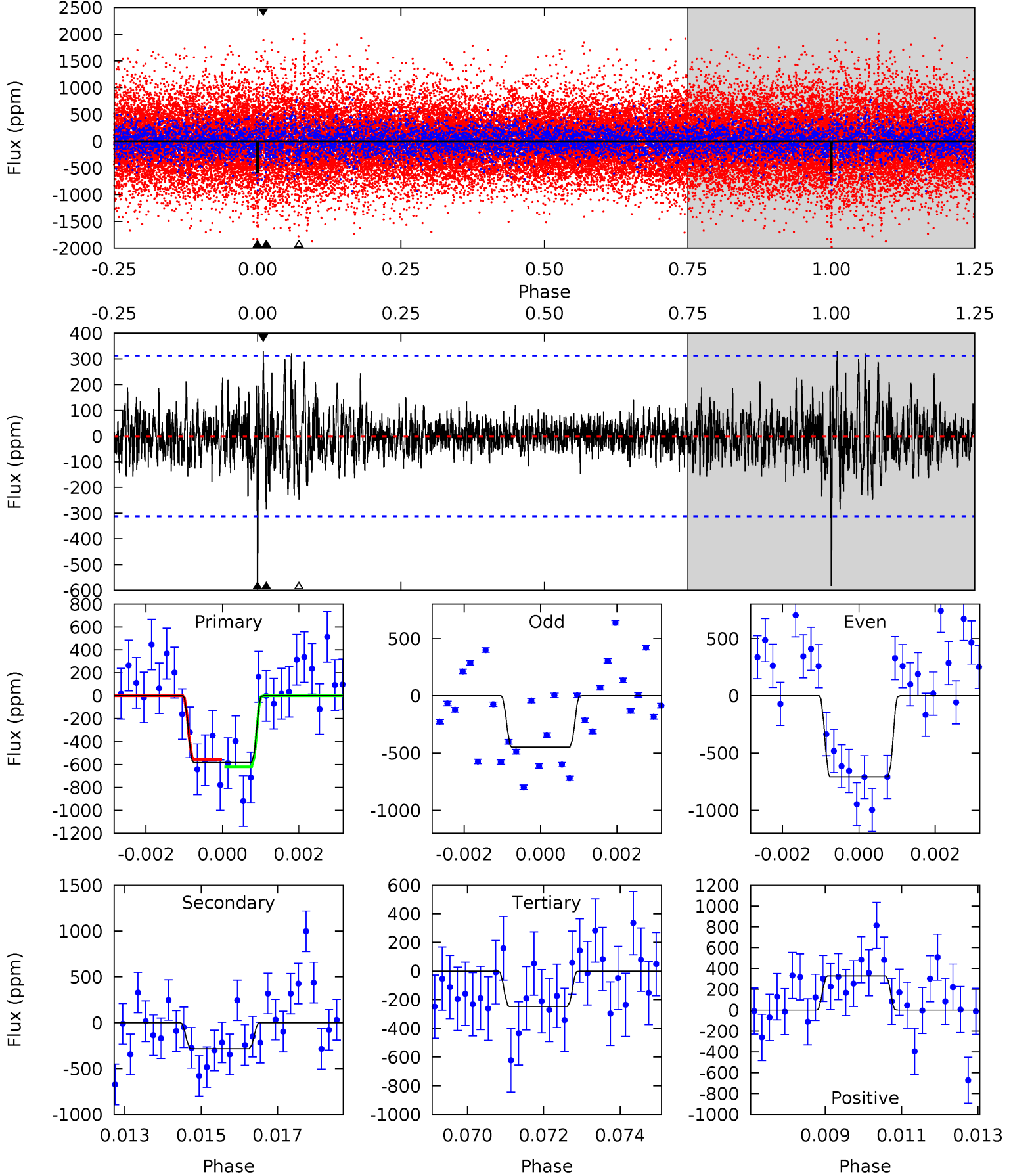
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.74	4.12	4.06	5.37	5.33	3.10	1.33	5.68	4.37	0.06	-1.25	3.23	1.20	0.36	0.84



Alt Model-Shift Uniqueness Test

010340115-02, P = 180.537314 Days, E = 139.676678 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.95	4.86	4.23	5.63	5.34	3.11	1.13	5.72	4.32	0.63	-0.77	2.21	4.60	0.36	0.55



Stellar Parameters For KIC 010340115

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5692^{+152}_{-169}	$4.547^{+0.033}_{-0.187}$	$-0.040^{+0.250}_{-0.300}$	$0.866^{+0.233}_{-0.078}$	$0.965^{+0.094}_{-0.115}$	$2.090^{+0.384}_{-0.976}$
	+3%/-3%	+1%/-4%	+625%/-750%	+27%/-9%	+10%/-12%	+18%/-47%
Source	PHO1	KIC0	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 010340115-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-245 ± 59	$2.60^{+1.56}_{-1.30}$	423^{+27}_{-16}	4536^{+1559}_{-744}	7292^{+20680}_{-4509}
Alt.	-284 ± 59	$2.49^{+1.44}_{-1.39}$	425^{+28}_{-19}	4781^{+2202}_{-781}	9311^{+37473}_{-5740}

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)

A_{obs} = Observed Albedo (Assuming $T=0$)

If a secondary eclipse is present, the system is likely an EB if $T_{obs} \gg T_{max}$ AND $A_{obs} \gg 1.0$

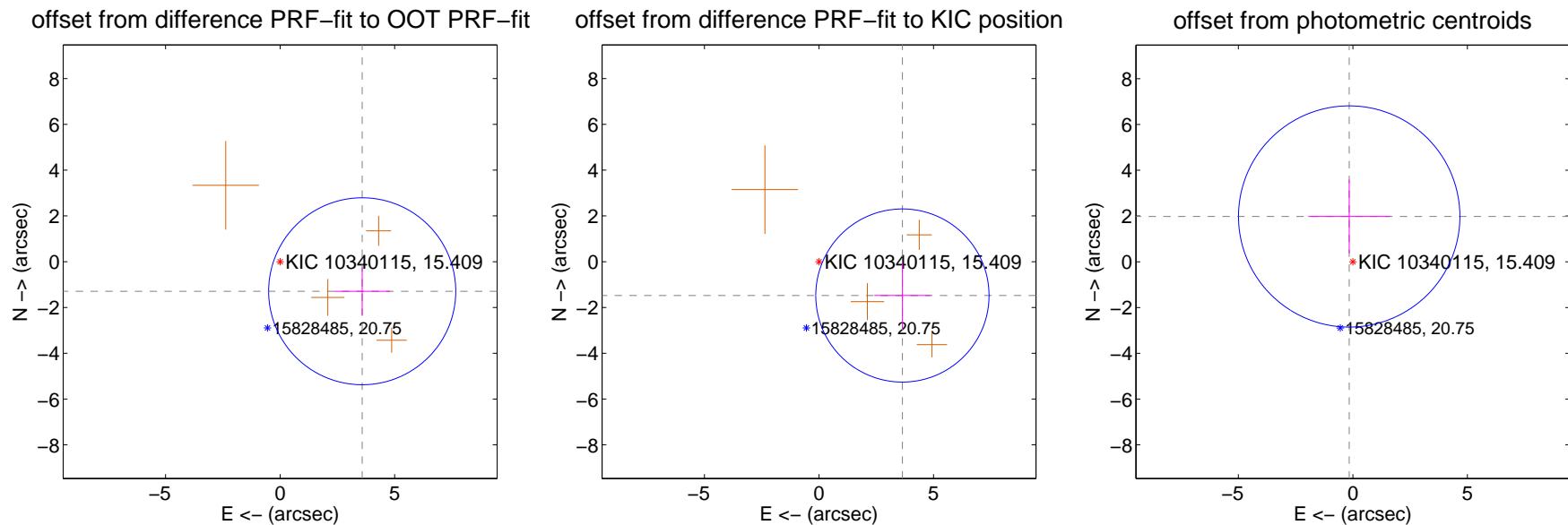
DV Centroid Data

Supplemental centroid analysis for 010340115-02. Kepler magnitude: 15.41. Transit SNR 7.86

There are 0 quarters with good PRF difference image offsets

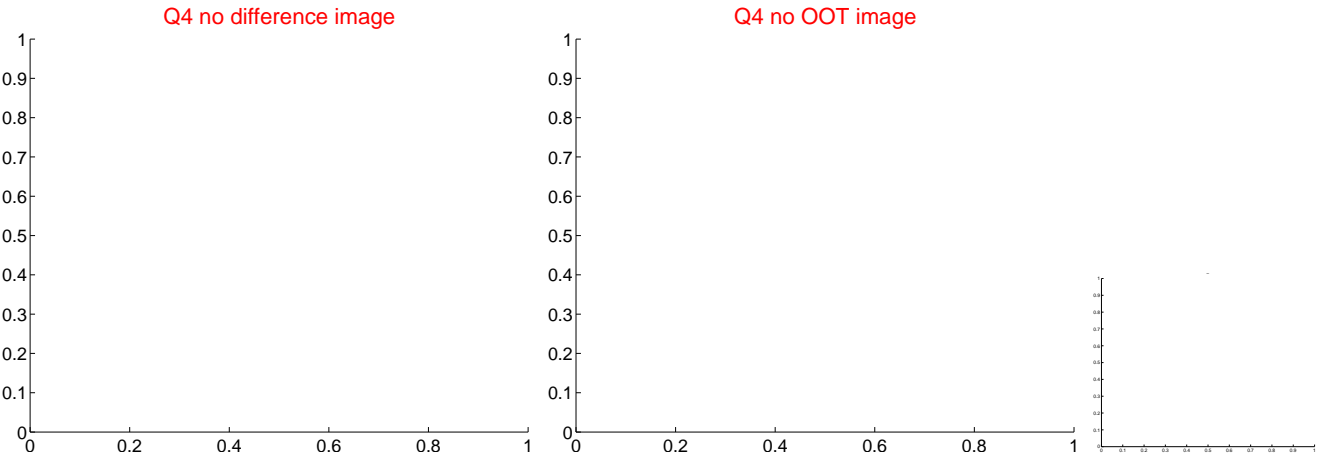
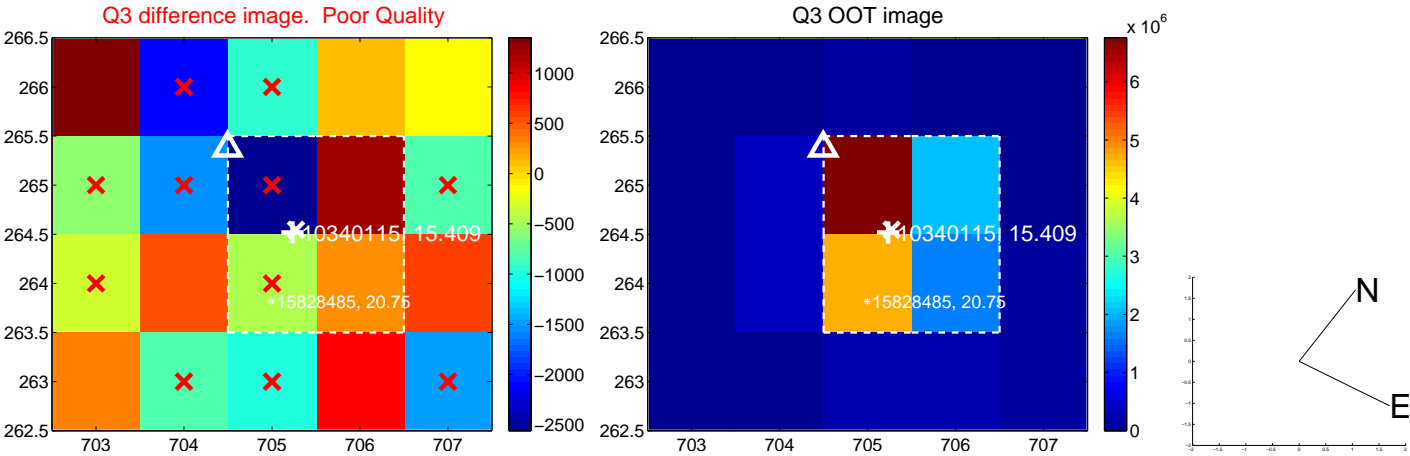
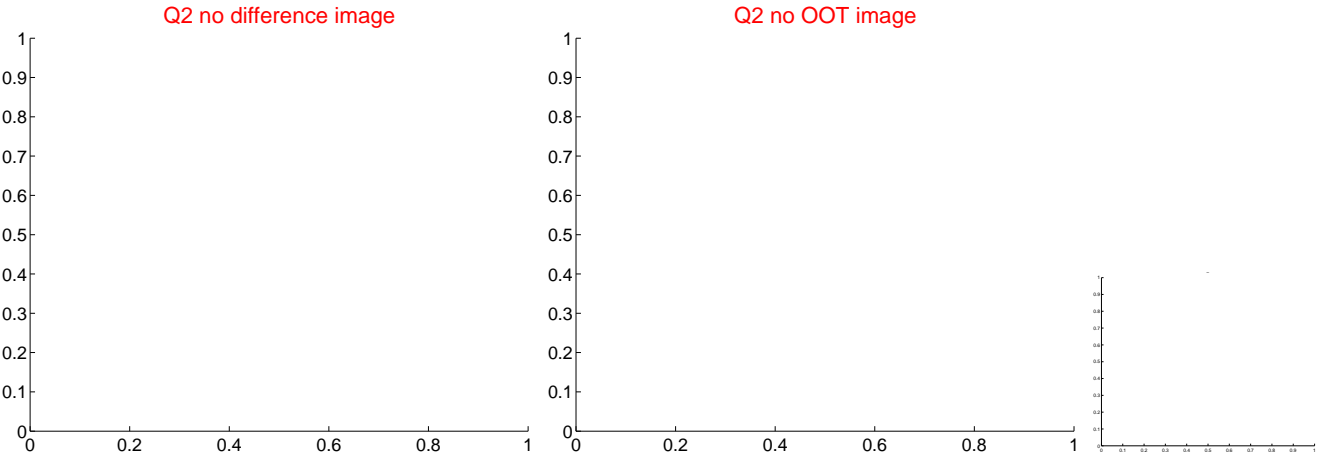
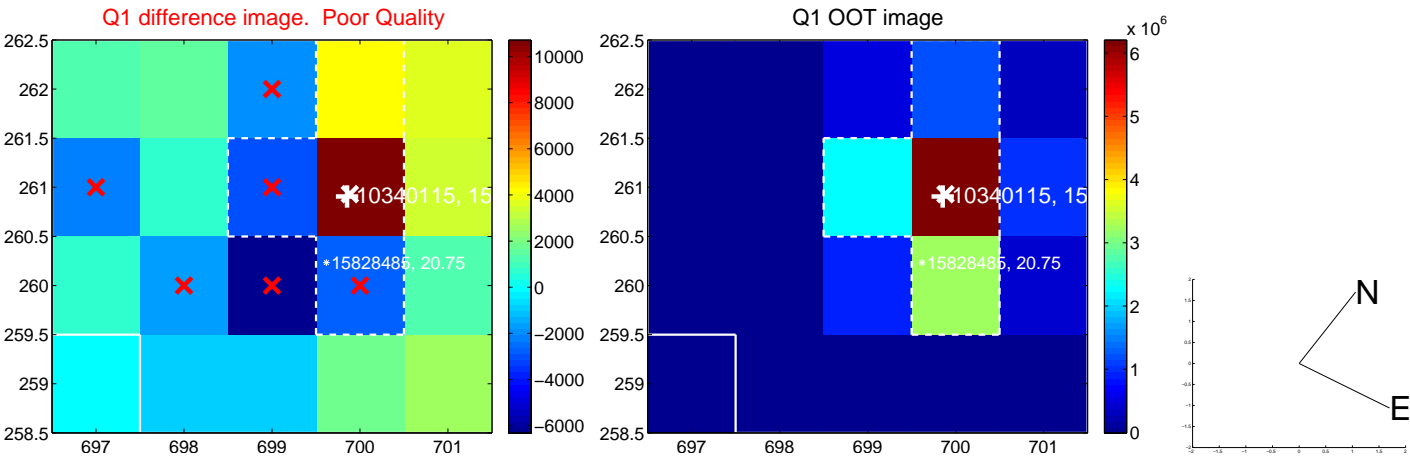
The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.810 ± 1.361	2.80	-3.584 ± 1.216	-1.292 ± 1.040
PRF-fit source offset from KIC position	3.930 ± 1.261	3.12	-3.642 ± 1.229	-1.478 ± 1.440
photometric centroid source offset	1.99 ± 1.61	1.23	0.16 ± 1.79	1.98 ± 1.61

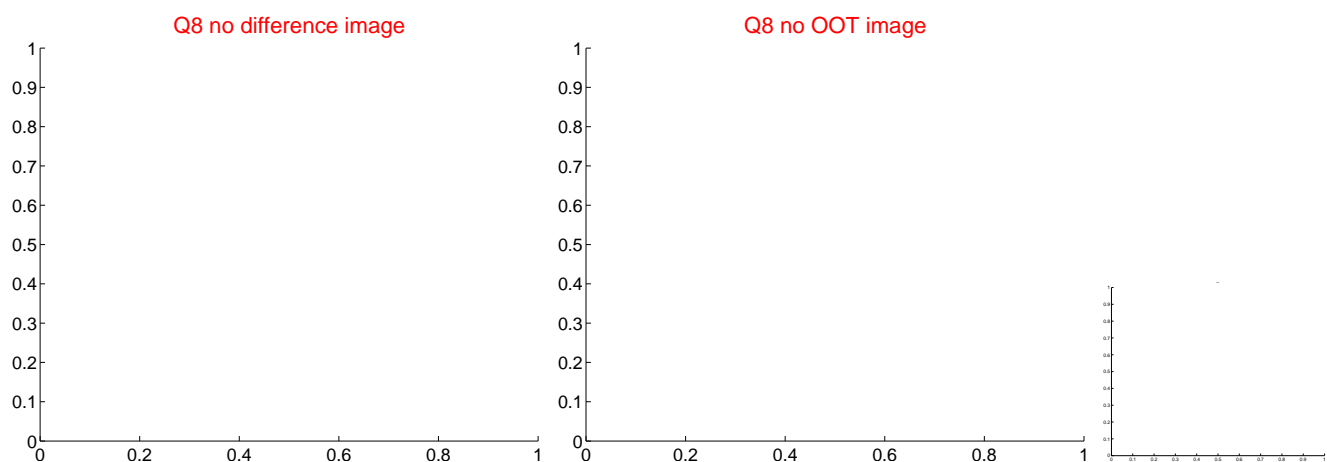
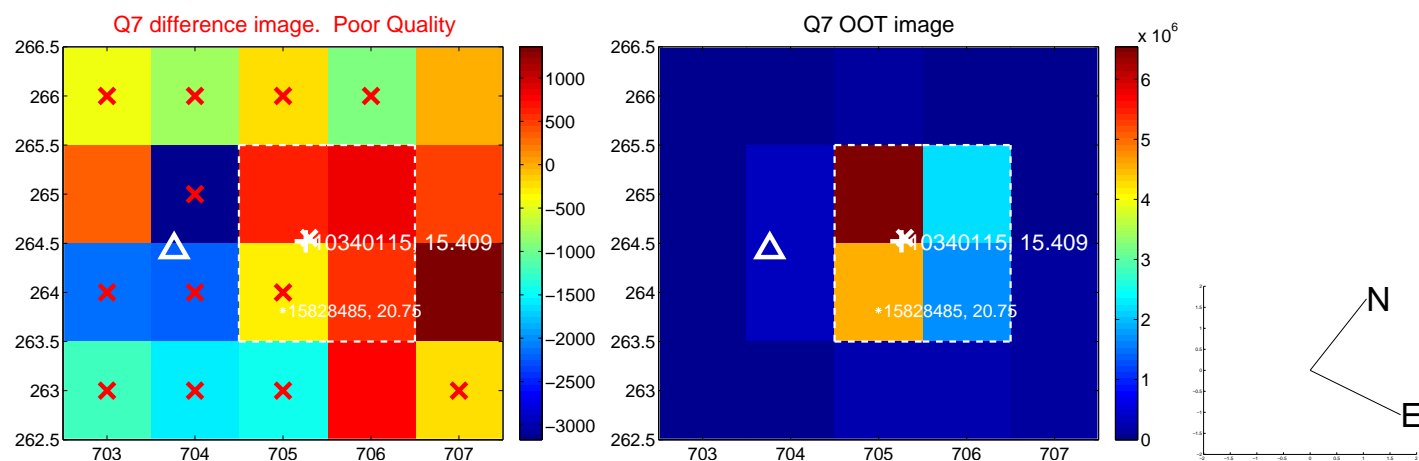
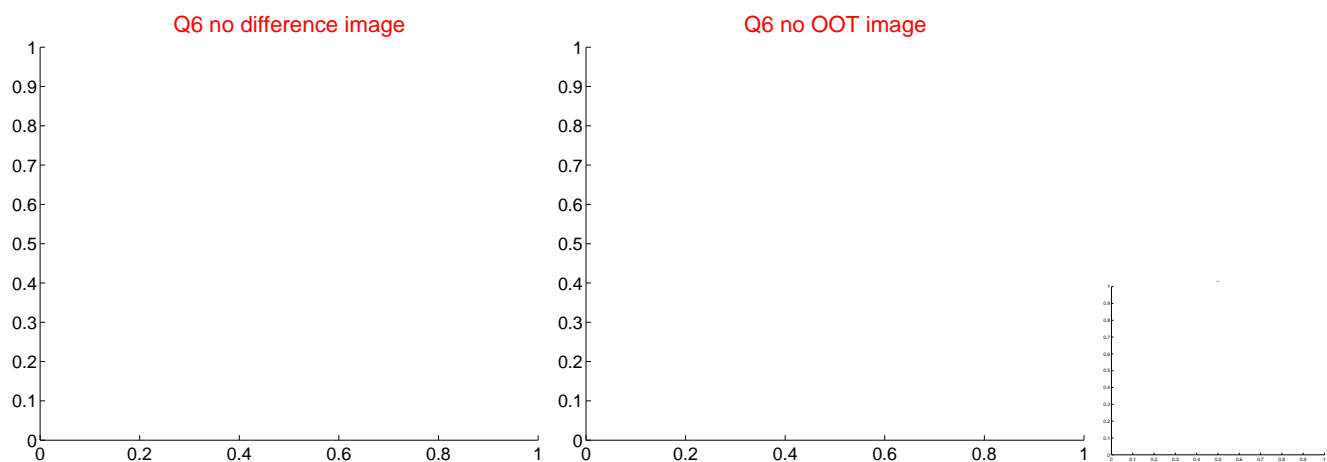
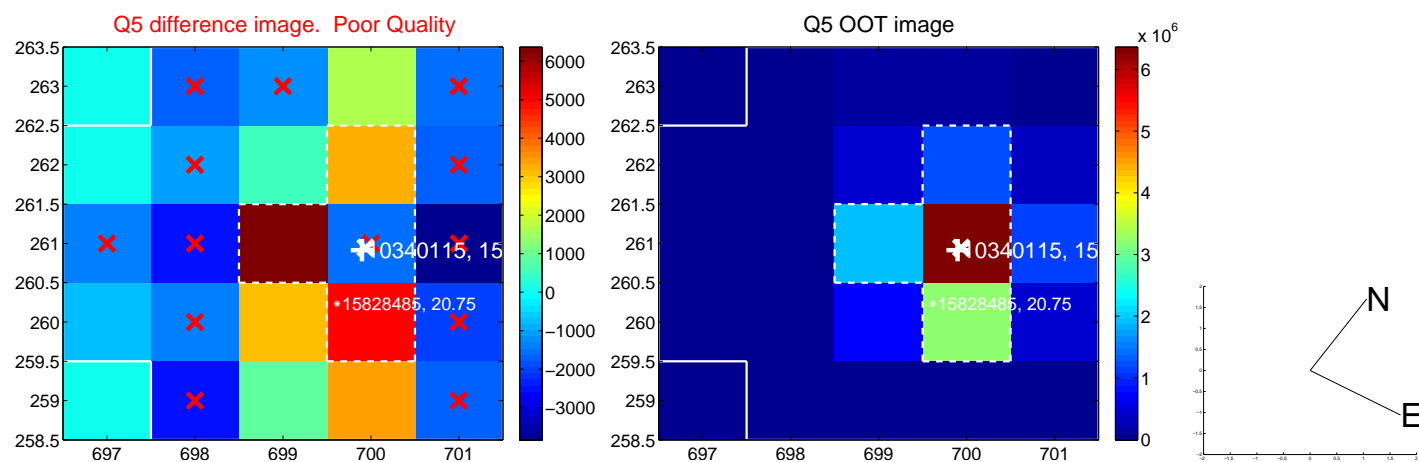


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

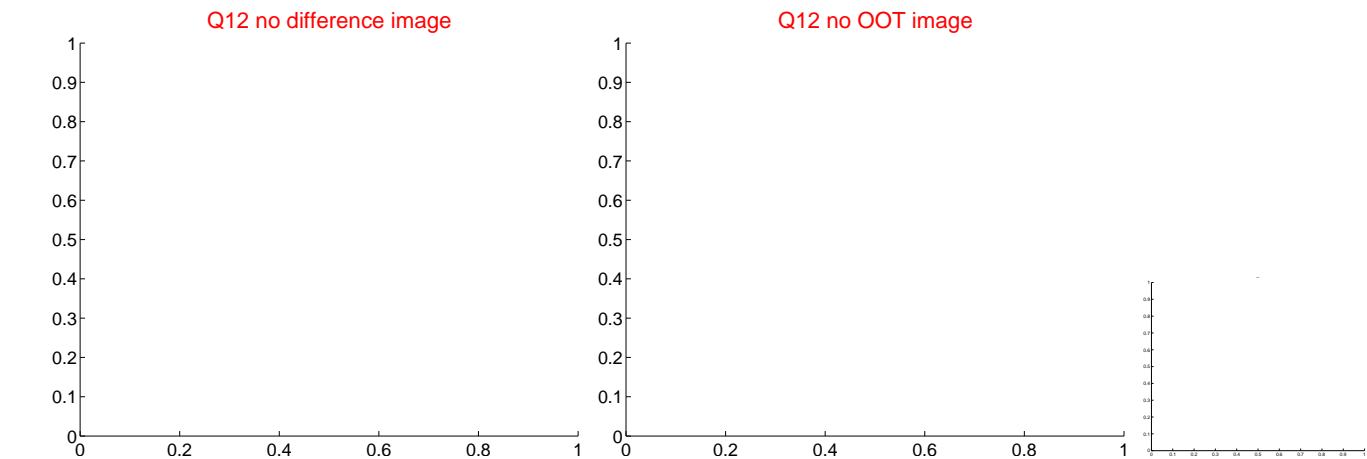
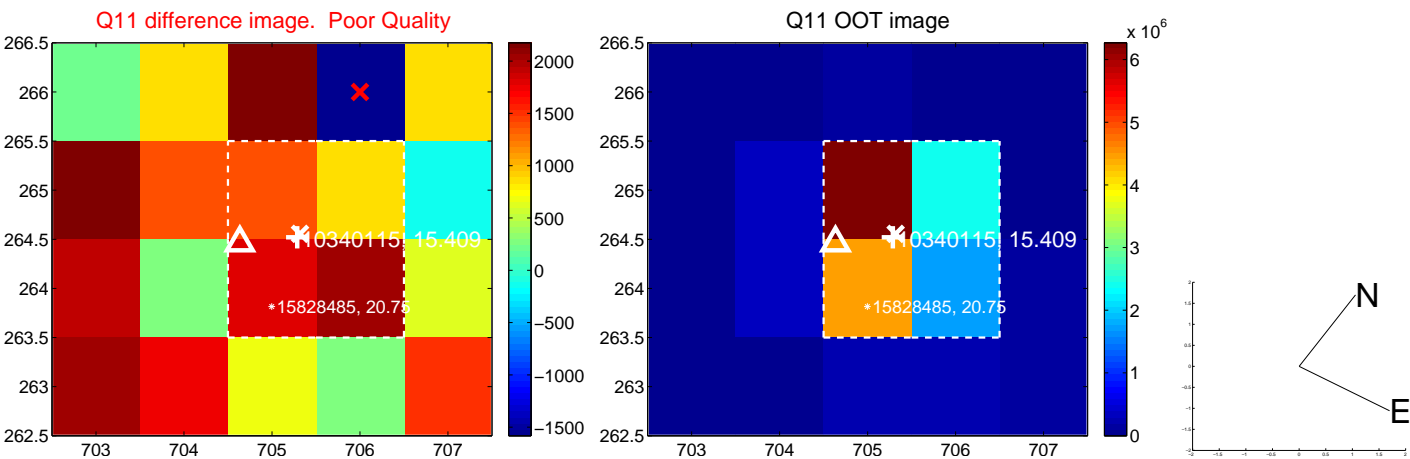
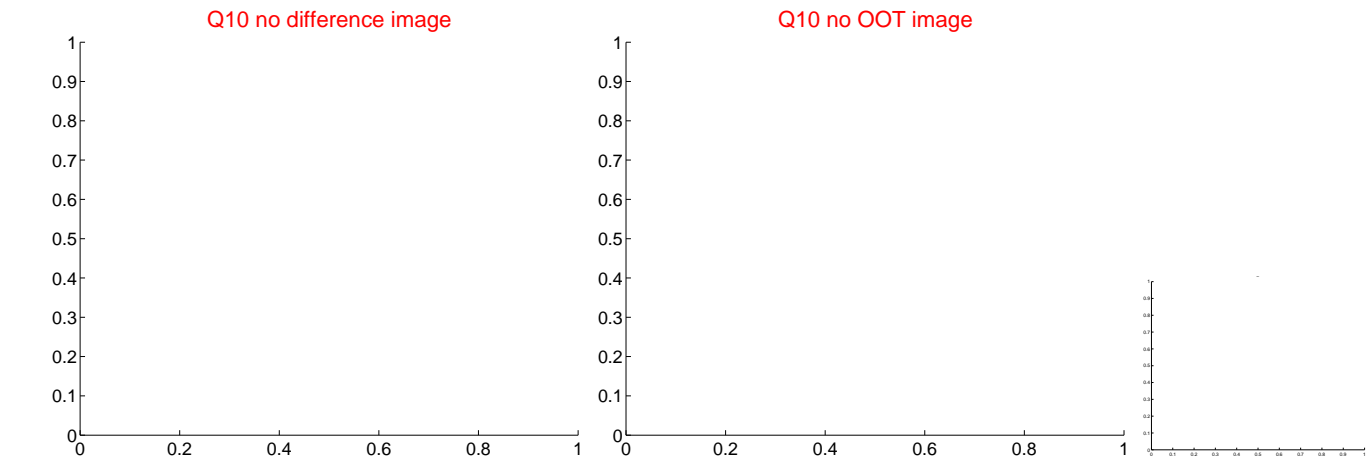
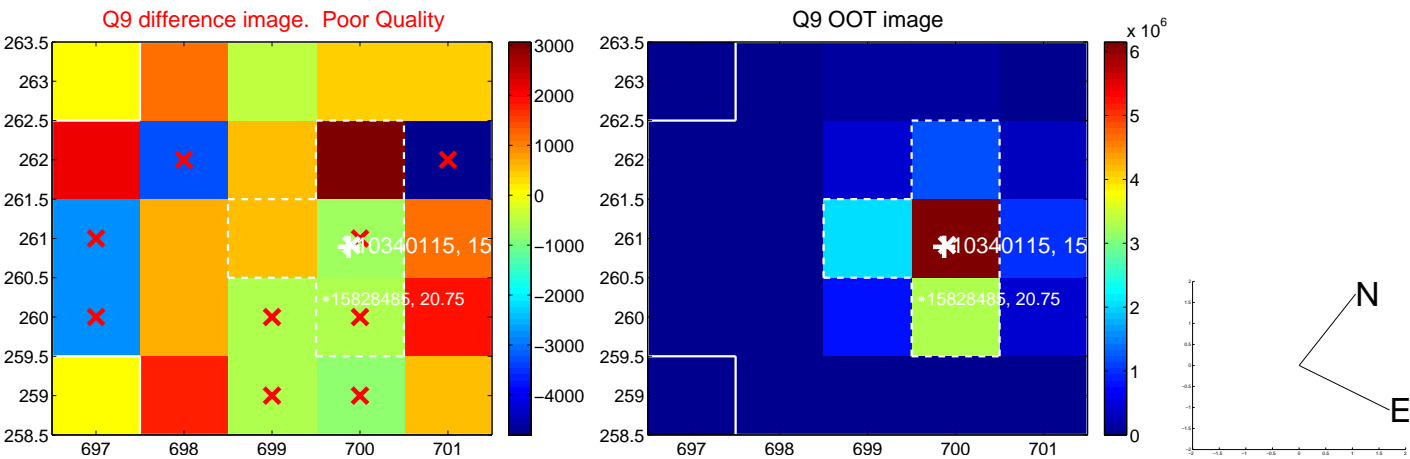
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



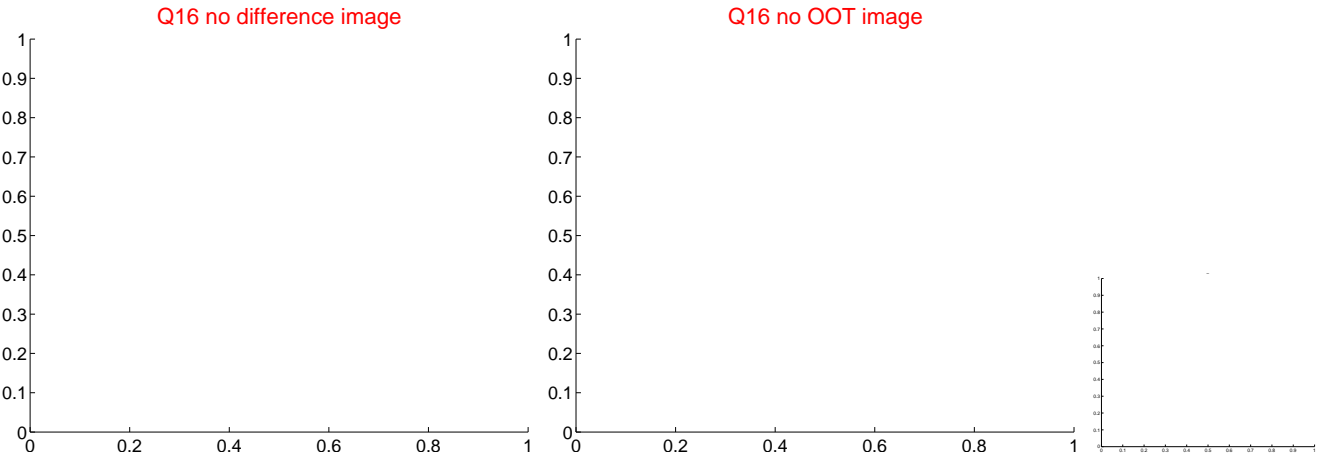
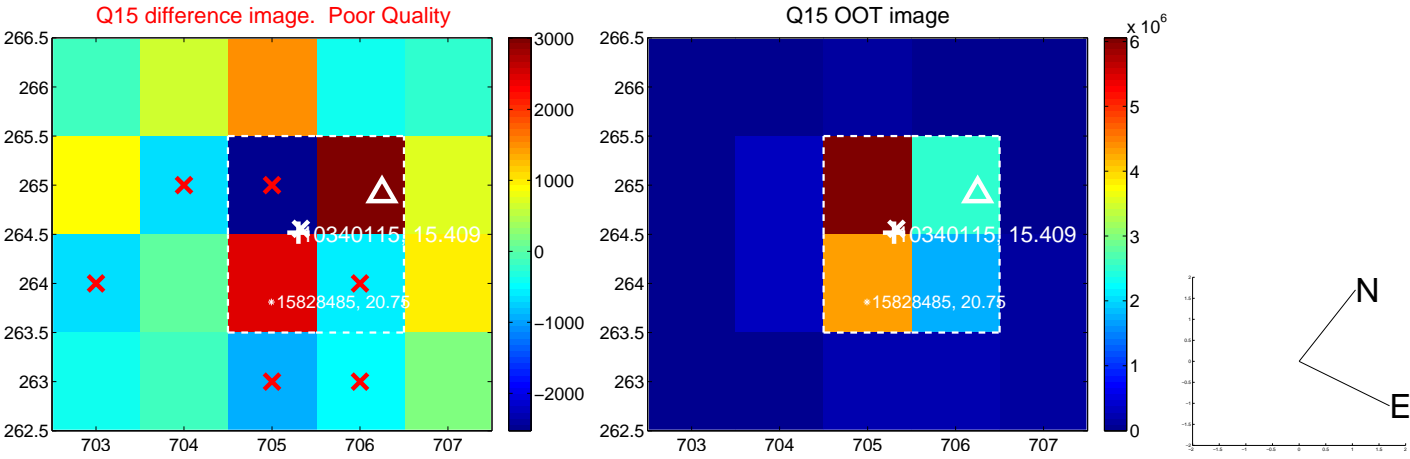
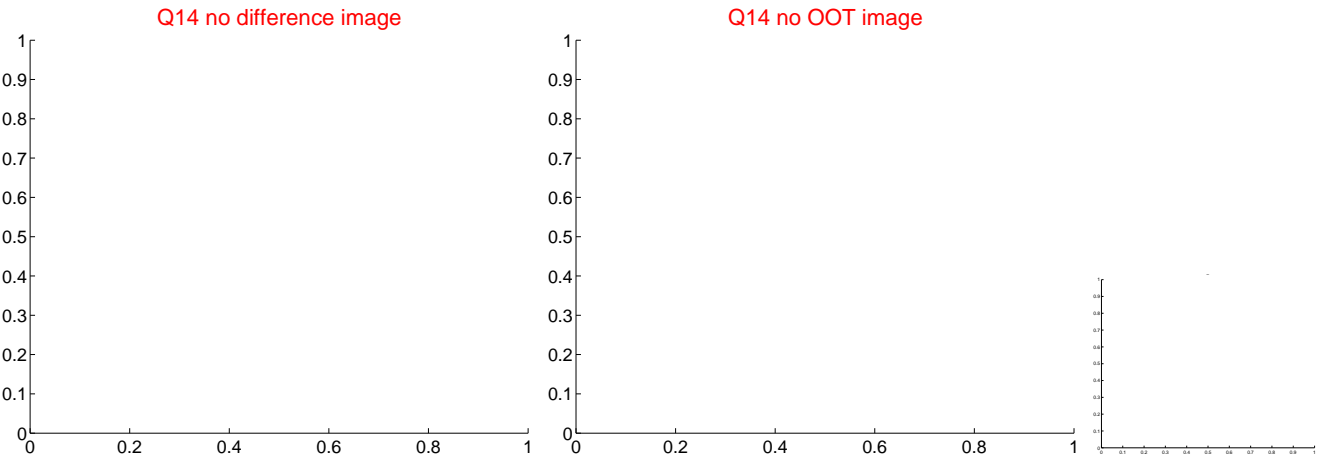
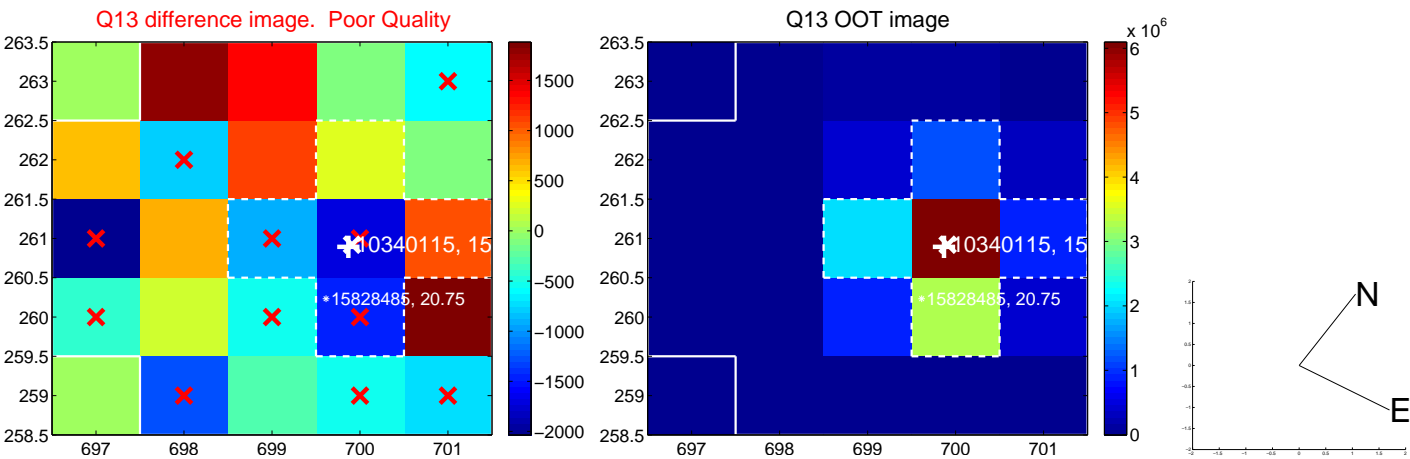
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



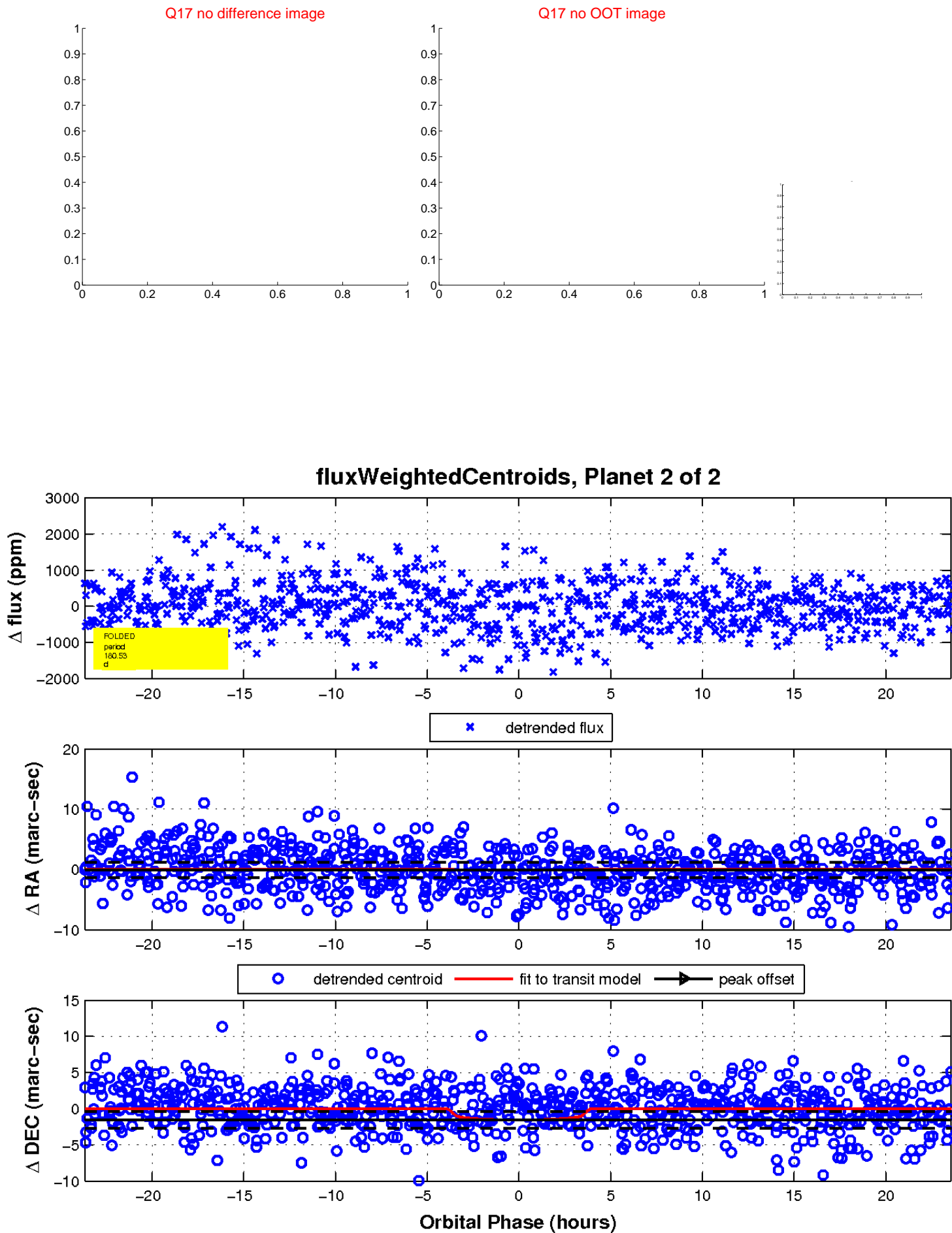
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination

